STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

CALIFORNIA ENERGY COMMISSION
RENEWABLES PROGRAM COMMITTEE WORKSHOP
(96-REN-1890)

Tuesday
November 26, 1996
10:00 A.M.

1516 Ninth Street
Sacramento, California
Hearing Room A

REPORTED BY: **A. FLYNN**

COMMISSIONERS PRESENT

MICHAL C. MOORE, Presiding

JANANNE SHARPLESS

STAFF PRESENT
(Alphabetically Listed)

Bob Aldrich

Manuel Alvarez

Jonathan Blees

William Chamberlain

Cheri Davis

Marwan Masri

Rosella Shapiro

ALSO PRESENT
(Alphabetically Listed)

Christo Artusio, Environmental Defense Fund
Don Augenstein, IEM
Bud Beebe, Sacramento Municipal Utility District
Jim Birk, Electric Power Research Institute
Kenneth Broome, Power Wheel Corporation
Barry Butler, Science Applications International Corporation
Bill Carlson, Wheelabrator Technologies
Scott Frier, KJC Operating Company
John Grattan, North American Power
Jan Hamrin, HMW
Robert Harmon, FloWind Corporation
Tom Hinricks, Geothermal Energy Association
Lon House, Association of California Water Agencies
Ed Hudson, Independent Hydro Developers
Robert Judd, California Biomass Energy Alliance
Jim Kennelly, Project Development
David Konwinski, Energy 2000, Inc.
Jody London, Working Assets
Eric Miller, Foresight Energy Corporation
Les Nelson, California Solar Energy Industries Association
Donald Osborn, Sacramento Municipal Utility District
Alvin Pak, Electric Power Research Institute

ALSO PRESENT
(Continued)

Gary Patton, Planning and Conservation League

Alan Purves, Laidlaw Gas Recovery Systems

Nancy Rader, American Wind Energy Association

Dale Rogers, Rockwell International

Roy Sharp, Sharp Energy Incorporated; Royal Farms

Kirpal Singh

Richard Sowter, BP Solar Inc.

Steven Thompson, Sea West

Jim Trotter, California Solar Energy Industries Association

Howard Wenger, Pacific Energy Group

Ed Wheless, Los Angeles County Sanitation Districts

Jonathan Weisgall, CalEnergy Company, Inc.

Ken Weisman, Consumers Utility Advisors

John White, Center for Energy Efficiency Renewable Technologies

Eric Wills, Solar Thermal Electrical Alliance

John Wood, Sithe Energies, Inc.

Raju Yenamandra, Siemens Solar Industries

INDEX

INDEX

P R O C E E D I N G S

PRESIDING COMMISSIONER MOORE: I'm Michal Moore; I'm a Commissioner with the California Energy Commission. I'm joined on the dais by my colleague Jan Sharpless, also Commissioner.

We have our Staff members with us. On my right Manuel Alvarez, my principal advisor; and Rosella Shapiro is on Jan's left; and Jonathan Blees, our attorney, is on Rosella's left.

Now this is the November 26 workshop, which implies informal. And I'll tell you that the interest in this workshop is perhaps higher than it's been in previous workshops so let me lay down a couple of ground rules going in.

We have a tremendous number of people who are indicating they want to speak today. Now this means that I'm going to have to impose something that I didn't have to impose the last time, and that is a time limit. I'm going to ask you to constrain your comments. If you've submitted written documents to us, hit the high points, don't read the document, because we're capable of doing that.

And for those that we had in our possession last night, although some of the stuff, I understand, came in very very late, and I didn't see it. And I have not had a chance to read it, I don't believe Jan or the Staff have either. And so let me just say that we'll expect you to keep your comments brief, to the point, and if you've got numbers that you want to quote, quote them, hit the high points, and tell us what they are.

And today is probably not going to lend itself to a tremendous amount of debate. That is more properly probably presented in the December 3 workshop with Staff where the Commissioners will not be present and where we're fully expecting some of the details and criticism to get hashed out.

And with that, let me introduce the idea that we are changing our time schedule just a little bit, and what we have in mind is that we've drawn up a map that takes us through the end of January. And it looks like this:

Today we're hearing the final coalition offers. I understand that some of the detail will not be there. Frankly, there's not a lot of time to add it in. We

expect that there may be some modifications coming in prior to the December 3 hearing, but, as you'll hear as I go through this time schedule, as of today for the big mix of ideas, you can assume that the time clock has pretty much run out. So what we hear today is going to be a lot of what we debate and come out with in the future.

We expect the Staff to conduct a workshop on December 3 and to be going through a lot of the details that are presented here today.

We expect that there will be a synthesis developed by January 3 by us, and that we'll advance that. And that it will be the subject of a hearing on January 15 which will include the synthesis that we develop on behalf of the Committee, a discussion of some of the alternatives that are available and what we're calling "other items." Things that got mentioned in the legislation, but, frankly, have not been the focus of very much debate at these hearings, micro cogen, fuel cells, etcetera.

We've allowed time for a potential final hearing on January 31. I don't know whether we'll use that or not. Committee hearing, sorry. Committee hearing on January 31. And we may or may not use that. If we don't, of course we'll cancel it with notice; but we've held it open as a potential last shot prior to us constructing the report that we will present to our colleagues at either an en banc or notice of business meeting here at the Commission.

That's our time frame. You can understand how much time we have. Basically, the clock really runs out on January 31, but you can back up from that and imagine how much time we need to construct the physical documents, and you have an idea of the time pressure that we're working under.

As I said earlier, it's going to be a pretty busy Christmas holiday for a lot of folks who are constructing the pieces of the puzzle.

Now, we have published an agenda for today, and I intend to stick to that. Which means that although I told our Staff folks that we would entertain remarks from them at the front end, I'm afraid I'm going to have to defer some of our Staff comments to Item 4 in order to stay with the schedule that we've published. And I apologize for that, but I will take them up first thing on Item 4 as we come to it.

With that, let me start with the idea of certification, the topic of certification.

Oh, I'm sorry. Excuse me. Jan, do you have comments?

COMMISSIONER SHARPLESS: No. Save time. Go for it.

PRESIDING COMMISSIONER MOORE: All right. With that, we'll go to the certification process and proposals. I have three people who have indicated to me they want to speak in this area. Let me call on Lon House, please.

And when you come up, let me remind you that it makes it easier for our record keeping if you announce your name. If you have a business card, if you give it to our scribe and allow him to get your name exactly right in the proceedings. Tell us who you are when you come to the microphone.

Welcome.

DR. HOUSE: Hi. I'm Dr. House. I'm representing the Association of California Water Agencies. I have filed comments that you have. I will go through them real quickly.

Our certification process that we're proposing we will be concentrating solely on small hydro facilities. Is we will provide a list of the names, location, size and FERC license number of the appropriate facilities to this Commission.

We would request that once they are deemed renewable technologies, that that renewable energy, the energy that comes from them, is to be considered renewable.

Getting to your last question in which we were talking about demonstration and customer tracking mechanisms, what we're planning on doing is putting together a mechanism, as part of our energy joint powers authority, in which we will be buying and selling renewable power. We will get the power from demonstrated or certified renewable energy providers. We will sell it either to our members or other members that are interested in it.

And the mechanism that we propose for tracking is that all the electricity comes from the certified renewable projects, we will know, we will know how much electricity the customers are using, and we will do an end-of-the-year report that will ensure you and show you that there is 50 percent of the energy that

the end use customers are using are coming from the certified renewable projects.

And the rest of my comments you can read yourself.

PRESIDING COMMISSIONER MOORE: Okay. On the 50 percent, do you propose that that be the threshold or that's a reasonable threshold?

DR. HOUSE: Well, one of the definitions that I have included in here is that I am considering customer load to be energy, kilowatt hours, and I would like to recommend that it's done on an annual basis. And what I suspect is that a number of our water agencies are interested in self service, because we have a lot of small hydro projects ourselves, and then a lot of them are interested in renewables for public relations purposes, and so the 50 percent is simply in the legislation.

In my testimony I say it's greater than 50 percent. And so I suspect that it will be probably higher. And what our primary interest is in is in the direct access applicability with the purchase of renewable power.

PRESIDING COMMISSIONER MOORE: Okay.

COMMISSIONER SHARPLESS: I don't have your testimony. I'm not sure the Staff doesn't have your written comments either.

DR. HOUSE: I gave six comments to one of the advisors. Six copies.

COMMISSIONER SHARPLESS: Well, then we'll have them. We don't have them before us.

DR. HOUSE: I've got some extra copies.

COMMISSIONER SHARPLESS: Mr. House, your affiliation, I'm sorry, I didn't.

DR. HOUSE: Association of California Water Agencies.

COMMISSIONER SHARPLESS: Okay. Association of Water Agencies. Your comments started out with small hydro specifically?

DR. HOUSE: Yes. We're limited, concentrating on small hydro. Because you'll get a lot of other comments, and that happens to be our area of expertise, and we'll let people that are qualified in other areas to make comments on that.

COMMISSIONER SHARPLESS: You're not checking to see if your certification scheme is either similar or in some ways different than other people's

certification scheme. Your focus was simply on small hydro, and I assume that it tracks with currently FERC requirements.

DR. HOUSE: Yes. And what we would propose is that you would get the FERC license number. If you wanted to get the entire FERC license, we could provide that.

But one of the areas you've asked questions about certification in other areas, I think your job is pretty easy for most of the technologies that you're dealing with. It's only when you run into the fossil technologies that you're really going to have to run into problems with making sure that they meet these other criteria.

So I think that if the other technologies simply provide you with similar things that we're providing, the name, location and size isn't appropriate for the other technologies, but they're going to essentially self certify. Because the solar guy is going to be a solar guy, and they're going to produce solar electricity.

And then some of my comments that's what I'm recommending. That you can focus most of the activity that you're involved in in the re-certification process and the monitoring on those facilities that use thermal, and you have to check and make sure they've got that 25 percent criteria.

Because the rest of it, once they're certified, they aren't going to change, and you don't have to do a lot of additional work.

COMMISSIONER SHARPLESS: Now, when you talk about small hydro, I assume you're conforming with the language in 1890, which is 30 megawatts and less?

DR. HOUSE: And that's why I'm recommending that we include the size, too. So you would get the name, the location, the size and the FERC license number.

COMMISSIONER SHARPLESS: Also you talked about, it sounds to me like even though you're representing Water Associations?

DR. HOUSE: Correct.

COMMISSIONER SHARPLESS: Is that correct? That your organization is looking to become a marketer or broker in some way?

DR. HOUSE: Well, we have a joint powers authority called the

Association of California Water Agencies Utility Service Agency, and it's a, we have already solicited a natural gas supplies for core and non-core.

Our first energy, or our first electricity where we call project service agreements, which are where things actually occur, is an energy efficiency one. And we will be voting next week in San Diego on a renewables project service agreement. We have an RFP for electricity services that was released in the middle of October and is due back in December for direct access and contract for differences starting in 1998.

COMMISSIONER SHARPLESS: So you're looking towards expand your business to a greater arena than your current customers?

DR. HOUSE: Well, we're not really looking for that, but there are a number of water agencies that are looking at becoming community service aggregators. And this joint powers authority that we've established will allow them to do that. But that is a choice that their board will make. It is, we have the vehicle for that, but it is not something that we are taking a position one way or another.

And quite frankly I told them if they think they've got headaches with water, wait until they've tried providing electricity.

But I know that there are a number of them. Particularly the rural water agencies are very interested in doing that. And the agricultural ones. Because if you look at most of the electric load in a lot of the areas up and down the valley, it's water pumping. It's agricultural or the water district. And so they are very interested in using our aggregation to provide electricity.

But I'm not sure that we're really a marketer or a broker. We're more of a -- and I don't know exactly what you call it, but we are soliciting supplies from marketers. We're just an aggregator, I guess that's what you would call.

And our interest in this proceeding from the very beginning is in the small hydro because we have over 100 megawatts of small hydro that is currently under QF contract. And we have about 1200 megawatts of large hydro that doesn't qualify for this. But the direct access provisions are very attractive because a number of these districts are very interested in self service.

COMMISSIONER SHARPLESS: Okay, thank you.

PRESIDING COMMISSIONER MOORE: Thank you. Appreciate your comments.

Oh, I'm sorry, excuse me. Marwan had a question.

MR. MASRI: Just a couple of quick questions.

Can you tell us what percent of small hydro in the state does your agency represent?

DR. HOUSE: That's owned by the water districts, we have about a little over 100 megawatts of small hydro facilities that are owned by approximately 40 water districts.

MR. MASRI: And the capacity is about 100 megawatts?

DR. HOUSE: But since this is, we've talked about this, I have received a number of calls from other entities that have projects that are interested in selling renewable power, and I'm not sure that we will limit it to renewable. But we will set up a renewables project service agreement that will allow entities to sell renewable power and to buy renewable power. And we'll just arrange the deals between them. Or I don't know exactly what we will do. Whether we'll be the broker.

We have asked for in our RFP for electricity services for proposals to provide that, but it is set up primarily for the water agency owned hydro facilities. But it could be opened to any renewable provider or to anybody that wishes to purchase renewable.

But that's one of the things when I talk about in my mechanism, is my proposal is once you set up, certify certain generation units as renewable, that that energy that's coming from them is classified as renewables. So that way we can market that energy. And all we have to do is track it back to where it originally came from. And we can mark it and say, yes, you got 50 percent of your energy from a renewable source, and so you would continue to qualify for direct access.

MR. MASRI: And do you have an estimate of annual generation say in a normal year, and how much it varies between wet and dry?

DR. HOUSE: It varies less between wet and dry than what the State Water Project does and the Central Valley Project does. Generally in dry years, the

electrical generation is more because there's less surface water, and so more water has to be pumped to various portions of the district. But it just simply varies, and the answer is a very long-winded, no, I don't know.

PRESIDING COMMISSIONER MOORE: Thank you very much.

Jan Hamrin.

MS. HAMRIN: Good morning. Thank you very much.

I don't believe you yet have my submittal, but copies are being made. The Staff had received them and looked it over.

This morning I am not representing any particular group, but I am putting forward a certification methodology that was discussed and developed this summer, this fall, by a group of people representing aggregators, developers, environmental groups and others. And though that group was meeting on a variety of issues, this was the one that was non-controversial and about which everyone generally had agreement.

So rather than let it lie on the floor unused, I decided to put it forward to you because I think it is fairly straightforward and you might be able to use it in your deliberations.

The goals for this proposal are quite straightforward. One, that the certification be very simple. Simple to administer, simple to do. That it be verifiable; that it be flexible; be able to be applied regardless of the mechanisms you decide for distributing funding; and that it maintain confidentiality of the players on both ends to the extent possible. Basically you would certify projects, not owners.

By the way, I think it's totally compatible with what Dr. House just presented to you for the hydro facilities. We're talking about, I believe, virtually the same thing.

You'd certify projects. They would indicate whether they were new or existing based on the definitions that you adopt here. They would get a unique certification number, and for the rest of the process they would be identified by number only.

They would, in effect, self certify. They'd fill in the forms with just basic information, what the project is, what the technology is, where it's located, its

name plate rating and so forth. And the only area, as Dr. House also mentioned, where I think you might have some work to do would be where it is a hybrid gas facility that has not previously been certified by FERC under the PURPA rules.

I think for those gas hybrid facilities that have already been certified as PURPA facilities, again it should just be a basic self certification. But for any that are new that have not previously gone through that process, you may have to set up some kind of brief screening process to ensure that, in fact, those projects are not using more than the allowable percentage of fossil fuel.

On the providers side, as you know, the legislation allows or requires that end use providers be registered. So this would just be part of that registration process. On those providers, energy providers who were interested in participating in the go first provisions of the legislation, would register, and they would be given also unique identification numbers. They would list the suppliers from whom they anticipate purchasing renewables by those supplier numbers and the estimated amount of customer load that they would be serving and the percentage of that load that they are stating in their advertising and promotion would come from renewables.

At the end of the year suppliers would provide a report. Providers would provide a report that would be identified by their individual numbers, would indicate the kilowatt hours, and this is done, as with Dr. House, on an energy basis.

The suppliers would indicate the kilowatt hours of renewables power that they generated during that year, and the numbers of the end use providers to whom they sold that power.

And at the same time the providers would put a report the number of kilowatt hours of load they served, and the number of kilowatt hours of renewable power they purchased and the numbers of the suppliers from whom they purchased it. It would be a, basically, a database number crunch. In the input/output analysis, the two numbers should come out the same.

This could be spot checked or verified on a project-by-project basis either way through the ISO, since all transactions will go through the ISO for on line transactions.

All the participants are metered already. Any suppliers do have a meter where they go have their interconnection into the grid. All of the participants who are purchasing do have meters, and the provider will have that data, otherwise they wouldn't be able to bill them or to keep track of bills.

And that's pretty much it. There would be some allowance for slight differences at the end of the year within a small percentage range and some time for remedying any non-compliance. Otherwise the enforcement mechanism would be loss of your registration or ability to serve end use suppliers, or end use customers, on the part of providers or loss of your certification as a verified renewables supplier on the supply side.

So I have a little more detail in the paper that you'll be receiving, but that's the basic process.

PRESIDING COMMISSIONER MOORE: That's pretty clear.

Do you have a question, Jan?

COMMISSIONER SHARPLESS: Yes. I guess, you know, I'm still struggling with some of the details of this. I don't quite understand why you need to indicate, for instance, in a certification process whether a project or a facility is new or existing.

MS. HAMRIN: That would only be for the purpose of funding. So this process works for both the go first provision and for funding provisions. So that to the extent that it is determined that you have different funding for new projects than for existing renewable projects, that data would be collected at the same time.

Now, again, it depends on what you decide is your funding process and breakdown here.

COMMISSIONER SHARPLESS: Okay. This obviously was designed several months ago.

MS. HAMRIN: Correct.

COMMISSIONER SHARPLESS: Was there an assumption on what the allocation process was when this proposal was put together?

MS. HAMRIN: It was designed so that it could fit a variety of

allocation processes, including one where there were customer rebates. So it would work for customer rebate or it would work on the simplier basis if monies were just going to produce. So either way. You probably would, may not be required to collect as much data if it was going to developers than if it was going as a customer rebate.

COMMISSIONER SHARPLESS: What is the period for certification? Would there have to be renewals?

MS. HAMRIN: Though it's not anticipated there would be renewals unless a company, provider or project had defaulted and lost their license and then came back later and wanted to get relicensed or recertified. Otherwise assuming that they follow all the rules and that they provided power as indicated during the year and that everything balanced at the end of the year, there would be no need for re-certification.

COMMISSIONER SHARPLESS: Only if there's a change in their status.

MS. HAMRIN: Only if there's a change in their status.

COMMISSIONER SHARPLESS: I see. And also you said something about confidentiality.

MS. HAMRIN: Correct.

COMMISSIONER SHARPLESS: Earlier, much earlier, well, actually I guess it was three weeks ago or four weeks ago at the beginning of this month, we talked a little bit about certification, and there were some proposals advanced to keep it simple, to follow FERC in a lot of ways, but recognize that maybe FERC wouldn't cover all of it, and the way that the program was going to be kept honest and monitored would be sort of a self monitoring. That implies that the information would not be confidential.

I'm not sure what kind of information you think ought to be confidential in the certification process.

MS. HAMRIN: Again, it depends, partly it depends on your funding mechanism. And to the extent that if there was a funding mechanism that was in rebates to end use customers, then who was selling to what customers and the amount they were selling was the kind of information that seemed to be sensitive.

And we were handling that by simply giving an identification number to the provider as well as the supplier for the aggregated load and would be able to check on that without giving sensitive information that had to do with end use marketing.

If you are not doing the funding through a rebate program to customers, then I think you still have an issue because of the 50 percent go first provision. And it was simply a discussion among various people, but particularly end use providers that they would like their customer, who their customers were and the sizes of their loads kept confidential, and this was our way of doing it was simply giving them a number and registering the information.

So you could still verify it. You could still track the input/output, but wouldn't necessarily have lists of customers and their loads that went along with that.

COMMISSIONER SHARPLESS: And there would be something that would be tracked by the ISO.

MS. HAMRIN: Correct.

COMMISSIONER SHARPLESS: Thank you.

PRESIDING COMMISSIONER MOORE: Thank you.

Marwan.

MR. MASRI: Jan, on the first page, first question you have there, last sentence of the first paragraph. I think it's an oversight, but did you mean to leave biomass out of the --

MS. HAMRIN: No, that was an oversight. Definitely was an oversight. This was just the definition as is founded in statute now with no change on the definition of renewables.

MR. MASRI: Okay. And as far as renewable resource provider, can that be a supplier who directly sells to the customer without going to an aggregator or a marketer or anybody else?

MS. HAMRIN: Yes, it's anyone who sells to an end use customer. And if it happens that it's going directly from a supplier to the end use customer, that would also be.

PRESIDING COMMISSIONER MOORE: Thank you very much.

MS. SHAPIRO: No, wait. I have one question.

PRESIDING COMMISSIONER MOORE: Rosella.

MS. SHAPIRO: I understood from your question and answer 10 that it would be actually the customer -- oh, I'm sorry, it's 11 -- the customer who would be the provider if you got directly from a supplier. Not that the supplier would be the provider. What did you mean? It says the customer receives a unique provider ID number.

MS. HAMRIN: I think that the difference would be if the supplier were selling to a number of end use customers, then I believe they would be provider. However, where you also have the complication that if the end use customer wants to go first, you still have to verify.

And this is most likely only a circumstance where the end use customer is a large customer and they are buying directly from a supplier, then you might register both. Again to make sure that an end use customer who's claiming they should be able to take advantage of the go first provision is actually purchasing 50 percent or more of their load from a supplier that's selling renewables.

At the same time to the extent that suppliers marketing to a number of end use customers, you want to make certain that they aren't marketing the same renewable kilowatt hour more than once, and that they are delivering what they say.

So in that unique circumstance where you have very large end use customers buying directly from a supplier, and a supplier who's selling to a number of large or end use customers, you might have them both registered.

MS. SHAPIRO: Okay. Thank you.

PRESIDING COMMISSIONER MOORE: Thank you very much.

Don Augenstein.

MR. AUGENSTEIN: I will speak from the area of the projector.

To give you a little bit of background, I'm with IEM. IEM is a non-profit that deals with, it's a very small non-profit, that deals with renewable energy and environmental issues. My past experience relevant to this what I'll talk about

has included surveying United States landfill gas and other biogas energy facilities. And some of this work has been for EPA, some for EPRI, and I've looked in detail at the environmental issues of its energy use and have also been a biofields project manager at Exxon in the Electric Power Research Institute.

What I'll try to do is speak very briefly to only one issue, which is the eligibility and basically pertaining to the certification of electricity from landfill gas and biogas as renewable and its treatment as a renewable.

And the reason I'm doing this is that one of the renewables coalitions has suggested that landfill gas be excluded as a renewable. Their argument being that you have to collect the gas anyhow, and there are tax credits involved. And, in fact, the collection of landfill gas may often be mandated and it may often derive tax credits which help offset the collection costs. This is true.

Certain criteria have to be met. The federal standards include size and pollutant emissions, and the tax credits are a complicated situation that apply to some of the situations. It requires independent ownership of the gas systems. It requires a start up with a fairly short lead time by next year, and the credits, in fact, apply to collection, and they accrue to the collector, not the producer, of the energy.

So that is in very brief summary the situation.

Now, you have this gas available at the collection point, but it is dirty gas. It contains contaminants which affect the energy use. Carbon dioxide and nitrogen being two major ones, and these cause accelerated wear with energy equipment. You have fairly small scale which will see relatively high capital costs, and you need operators present for various reasons, including adjustments that are required on the plants.

So other issues have to be dealt with. Your gas availability varies with time, and it's not readily predictable. This is a major problem. And under sizing and over sizing of your plant is frequent.

So the consequence of this is that even with gas that you might look at as inexpensive or free, your costs will exceed the conventional power costs that are expected for sale to the grid. That is of large scale plants with conventionally generated power, it may be two to three cents per kilowatt hour, and the costs are

comparable to other renewables.

There are a number of information sources. I helped prepare one. And other estimates are rather similar. I have them but won't show them. Laidlaw Gas Recovery is a participant in these proceedings.

So you take a look at, and here we are simply talking about landfill and biogas as renewables, with only two exceptions all of the landfill gas plants in California are under 10 megawatts. That's your size constraint. Plants that come on line in the future may be tending toward even smaller sizes.

Now everything I've said is available in publicly available references. These are five of them. A couple of EPA reports. Two reports by entities that make electricity from landfill gas. Laidlaw Gas Recovery and Waste Management, and there is also an EPRI report on the resource base. I do have these with me if CEC Staff would like to see them or reference them, and in fact I have given some earlier material to CEC Staff on this issue.

I think another reason that one needs to consider the treatment of landfill gas as a renewable is the fact that if you take a look at the gas exploitation, it is under 25 percent within the State of California. The criterion for availability is that a site could support at least two megawatts electric, although some sites do function at slightly lower capacities.

And it happens that EPRI and EPA have both put out resource estimates, and they're in reasonable agreement. And I think this limited exploitation is another indication of the cost barriers to use. Even though you do have these credits and gas delivered to a collection point, and you find that much gas is flared rather than used for energy once it's taken at the collection point, and I think you can contrast this to wood and wind where energy uses have expanded clearly to the points of resource constraints. In the case of wood, the price has gone up; and in the case of wind, the sites are pretty well exploited.

So comparing landfill and other biogases, electricity to other renewables, I think you can see that the benefits are quite similar. You have renewability and conservation, domestic production, and in particular you have environmental benefits.

The climate benefits of gas use are major, and landfill and other biogas energy uses are the subject of a number of government initiatives at various levels. This has been written up in the renewables working group report, and I don't think I have to dwell on it.

So the gist of my presentation is that landfill gas and other biogas to electricity should be, certainly should be eligible resources of renewable electricity.

The gas available is accompanied by high conversion costs. The benefits are comparable to other renewables, and treatment as a renewable is necessary to obtain exploitation of this resource.

So this has been a very quick overview. I have backup information, and I'd be willing to make it available as you may require.

PRESIDING COMMISSIONER MOORE: Let me go to your last point then, and that is the treatment of the renewable -- the resource we've been hearing from other speakers, at least tangentially in the past, that that's not the case.

MR. AUGENSTEIN: That's true.

PRESIDING COMMISSIONER MOORE: That in fact that you don't need to be treated as that because it's going to go on anyway, it's capable of carrying its own weight. Do you have calculations in what you submit to us that would back up your statement?

MR. AUGENSTEIN: I have a report. Let me go and get it.

PRESIDING COMMISSIONER MOORE: Actually all I want to know is in the written stuff that you're submitting to us are there calculations that back up that statement?

MR. AUGENSTEIN: There are calculations that show a range of costs that go actually from three cents to nine cents. And what I will do is submit the entirety of a report that looked at six facilities in the United States and four in the UK and let that be part of the record. It is called Landfill Gas Energy Uses, Technology Options and Case Studies. And I hope that that would be sufficient.

As with any renewable that the cost figures are, you know, difficult to obtain, but they are, if you look at many many sites, they are very clearly high for the major portion. Most of this gas that you see used was, in fact, developed under

standard offer four contracts, and it would not have been developed without them.

So this is why I felt that I had to say something to address that point that landfill gas should not be treated as a renewable.

PRESIDING COMMISSIONER MOORE: Okay.

MR. AUGENSTEIN: So I would submit that report and any other reports that may be deemed necessary. There are two appendices in that report. One's by Laidlaw Gas Recovery Systems, and they give an example plant that needs seven cents a kilowatt hour to make it.

PRESIDING COMMISSIONER MOORE: Great.

Jan has a question for you.

COMMISSIONER SHARPLESS: Could you tell me how many landfill gas energy facilities we have in the State of California?

MR. AUGENSTEIN: There are about 30 I think. I didn't count them. That's one thing I didn't do.

COMMISSIONER SHARPLESS: That's okay. An approximation.

MR. AUGENSTEIN: This is the list.

COMMISSIONER SHARPLESS: Okay. That's the list. And most of them have been built in what time period?

MR. AUGENSTEIN: They've all been built since 1981 or -2. I know the people that built the first couple.

COMMISSIONER SHARPLESS: And they're all on SO4 contracts?

MR. AUGENSTEIN: They are on, some of them are off the cliff. They were all under favorable contracts. Nearly all of them SO4 contracts, that's quite true. Some of them started with other contracts, I believe, where the avoided fuel costs were quite high, around '83 or '84, one of them I know.

COMMISSIONER SHARPLESS: Okay.

MR. AUGENSTEIN: Other than that, I cannot speak to it.

COMMISSIONER SHARPLESS: And is your, I don't know if you're representing, you know, all of these landfill gas facilities or just the concept.

MR. AUGENSTEIN: I should clarify this. I'm with a non-profit. I've been working on the various issues on this for EPRI and EPA and others for ten

years, and I'd hate to see landfill gas excluded having done all of this work.

COMMISSIONER SHARPLESS: The question is are you looking for money to support existing facilities? Are you looking for money that would --

MR. AUGENSTEIN: It would be a balance as with other renewables.

COMMISSIONER SHARPLESS: So you would look for new and?

MR. AUGENSTEIN: Under the guidance of AB 1890, that is correct.

COMMISSIONER SHARPLESS: New and existing emerging? Anything emerging in the landfilled area?

MR. AUGENSTEIN: There is technology emerging, but I won't go into it here. It's fairly far down the road.

The basic thing that I'm asking for is treatment of electricity from landfill gas in comparable fashion to the other renewables that are being discussed here. And others will speak more to the mechanisms that they desire.

COMMISSIONER SHARPLESS: Thank you.

PRESIDING COMMISSIONER MOORE: Marwan.

MR. MASRI: Do you know about plans to build more of these facilities in the near future in California?

MR. AUGENSTEIN: Because the tax credits are ending next year, there has been this last chance kind of attitude, and as a consequence, those people where it has been marginal have been considering very strongly building. I know Kiefer [phonetic] in Sacramento is one of them. And there are others.

MR. MASRI: Are you familiar enough with the standard offer four contract that these projects have to tell us what energy payment they had? Did they have the fixed heat rate option or the fixed cents per kilowatt hour?

MR. AUGENSTEIN: You know, I honestly don't know. I do not know the details of their standard offer four contracts. There are some others here who may be able to speak to that.

MR. MASRI: Okay.

PRESIDING COMMISSIONER MOORE: Thank you.

All right. I took Mr. Augenstein out of turn because he had a time commitment. I'm going to return now to the broader agenda, and if there is, I don't

have anyone else down who specifically indicated they wanted to speak on certification proposals or further discussion of them. So what I'm going to do is move into the area that we've spent the most time on in the last few hearings, last few workshops, excuse me, and that is --

COMMISSIONER SHARPLESS: Could I ask a broad question?

PRESIDING COMMISSIONER MOORE: Yeah.

COMMISSIONER SHARPLESS: I am just curious, we've now had the sum total of I guess what we're going to hear on certification, so this means that you all are real comfortable with what the Committee has heard? And you have no concerns with what we've heard? And you're going to let us go into the film making business and leave anything we want on the cutting room floor, so to speak?

Maybe not. What do you think, Mike.

PRESIDING COMMISSIONER MOORE: Well, I'm not sure that, you know, I've want to cut it off, you know, with that. I'm assuming that there'll be more comments at the Staff workshop.

But Jan raises a good point and that is that there has been a tendency in this process, I think, to hang back and to present very few ideas in the first iteration of this and wait and hear what other people were saying and assume that there would be more time later on, and that, in fact, you could get your ideas forward.

What Jan is basically putting out to you, and just so you take it seriously, is this is the end. Today's it. The end. There'll be a discussion at the Staff workshop where things get fine tuned and it gets reported back to us what some of the holes are, but if you've got ideas, if you've got difficulty with the way it's been presented or with what you've heard, this is the time to include that in your comments.

Because, frankly, you know, just to underscore where Jan is headed here, this is it. Today's it. This is your chance for formal proposals. Next time you see this, you're going to see our proposal. And that indicates, or it should indicate in the slang parlance that gets tossed around in these things, that we've started to think and put our thoughts down on this. And when the vote comes, you guys won't be

voting, but we will. So I think that states about as strongly as I can.

Nancy, you have a reaction to certification?

MS. RADER: Nancy Rader, American Wind Energy Association.

I just wanted to say that our proposal on certification is in our comments and was in our comments last week, and we didn't have a presentation today. And if you'd like, I can run through the elements, but it's nothing different than what we had submitted last week. So I'm available to answer questions and to give an overview here if you'd like.

PRESIDING COMMISSIONER MOORE: Right. Well, this is not to indict anyone who has submitted their comments, but, you know, if you didn't feel like your comments got fairly heard in the documents or something, what Jan's saying is we're starting to close this off. That's all she's putting out. It's not to indict previous stuff that came out. Not at all.

Thank you.

MS. RADER: Thank you.

PRESIDING COMMISSIONER MOORE: Yes. I'll come back to you, but.

MR. GRATTAN: Having heard the speak now or forever hold your peace, I guess I'll speak.

PRESIDING COMMISSIONER MOORE: But it's important. You understand we have to close this off because we've got work to do, and, you know, let me just digress for one second.

In past hearings we've heard a number of commercials. Okay? You heard them. We heard them. Today's not a day for commercials. If somebody in the audience is going to speak to us and tell us how well their firm's doing and how well they're performing and that if my mother got something in the mail that said their firm was available, she'd sign up; no, not today. No commercials. This is the time for facts. This is the time for numbers.

This hearing was designed to hear numbers. So if you're great, good. We acknowledge it, but don't give us the commercial today because today we're here to work. Sorry, didn't mean to interrupt.

MR. GRATTAN: Good morning. John Grattan, and I represent North American Power, which is an owner of the Ultra Power Three Facility in Blue Lake. A little biomass facility. We've submitted a petition to be declared a renewable resource technology provider.

COMMISSIONER SHARPLESS: Yes.

MR. GRATTAN: And we urge that the decision is quite simple. That there is a statutory test, and that the Commission can act sooner rather than later.

We also urge that this is a ticket merely to get out on the market, and we urge the Commission to keep the process quick and simple. We can live with any of the tracking proposals suggested today.

PRESIDING COMMISSIONER MOORE: Good. That was a bold stroke, and it's certainly putting that on the table in the way that you did caused us to focus on one method of doing this. So, yeah, I think both of us commend you on the boldness of the effort.

MR. GRATTAN: Well, it's not really that bold.

PRESIDING COMMISSIONER MOORE: Well, I thought it was. I mean especially out front that way in the first part.

MR. GRATTAN: Thank you.

PRESIDING COMMISSIONER MOORE: Thanks.

Bud.

MR. BEEBE: Just very quickly. Bud Beebe with the Sacramento Municipal Utility District. Just two items.

First of all you've heard a lot of talk about, testimony, about the 25 percent limitation on fossil fuels for renewable projects. And I know that SMUD's been -- we've steered clear of this in this proceeding because we thought the Legislature was fairly clear in what they wanted to do.

However, there's such a ground swell in that, and I think it's important that you know that outside of this proceeding SMUD has been a very very strong supporter of the use of hybrid proposals for getting particularly emerging technologies into the marketplace, we see that as a very good way of helping the renewable processes in the future.

So we just want to come out and say that SMUD supports that as a concept. Whether or not you can include it within this, we have to remain neutral on that.

Secondly, in the first workshop I did what I would consider a rather poor job of explaining my suggestion that as a part of the POWEX exchange transactions there'd be some way of identifying renewable energy project or renewable energy as renewable energy, and that this be included within the transaction, I don't know the extent to which you can incorporate that into any of your ultimate decisions.

However, I did try to do a little better write-up when I submitted my statement from November 6 workshop. So I'd appreciate it if Staff would look at that again.

PRESIDING COMMISSIONER MOORE: You can bet they will.

MR. BEEBE: Thank you very much.

PRESIDING COMMISSIONER MOORE: And you'll get one more chance to have some contact with Staff.

MR. WHITE: Yes, my name is John White with the Center for Energy Efficiency Renewable Technologies.

I just wanted to draw attention to a couple of points that we've made that I think are reflected in other parts of discussion. I'm actually comfortable having the Staff and the Committee synthesize what we've heard and give us a socking horse. I think, though, there's a couple of distinctions that I want to be sure are at least clear from our standpoint.

One is that the definition of what is a renewable provider or a renewable power source for purposes of direct access for purposes of being called such and whatever benefit it conveys, I think is one that is important, and is important to be fair about and to not disadvantage any particular class of competitors unless there's a pretty good reason.

I think that category of activity should be ecumenical. I think the Legislature, in fact, embraced a universe of technologies, not all of which we would individually favor, but I think conceptually that the --

PRESIDING COMMISSIONER MOORE: Let me stop you for just a second. I know you've got an example in your mind -- or you could construct one.

MR. WHITE: Let me just finish with the distinction. Okay.

What is renewable for purposes of putting them in a portfolio and purposes of taking advantage of the term of our renewable is something you all are needn't to be a guardian of. But when we give money away, I suggest we can have a different criteria. And I think some of the confusion is about the giving of the money away and who's eligible for that versus who gets to be part of the direct access portfolio.

So I think that it's fair to have two different definitions, and I think the one should be broader than the other. And when we talk about the money later today, I have some specific suggestions about the process for allocation of funds. But I think when we are defining who is able to go first and who is able to be part of packages of portfolios, I think that definition is somewhat different than for a project that has particular merits and applications. I think that distinction is one that can be reflected in what proposals you develop and maybe solve some problems.

Secondly, I think the market as a whole lacks, at present, sufficient environmental information that is available to customers about all the technologies. I'm leery about putting forth specific requirements on renewable providers that aren't going to be on other providers as a way to unintentionally inhibit the market.

On the other hand, I think disclosure of fuel source and emissions will be important to be available to customer for renewables as well as for fossil.

But I think that's the information the customer gets is something again you need to anticipate a little bit building into the market some things that are going to be necessary and that may help resolve some of the other conflicts. So those were my two principal suggestions.

PRESIDING COMMISSIONER MOORE: You think we could disadvantage one competitor versus another.

MR. WHITE: The landfill gas discussion was illustrative, okay. Now,

I think in my definition landfill gas is renewable, okay, and I think it has benefits to it of an environmental nature of some proportion. Whether those technologies individually or collectively ought to get support from production incentives, I think is an entirely different question.

And I think they may have to prove themselves, just as others may prove themselves, worthy of that support. And I think that's an example if you say they're not renewable and they're not in the definition and can't be part of anybody's portfolio or can't be marketed.

The hydro is also illustrative. I don't think anybody's proposing, that I've heard, that hydro needs additional subsidy to stay operational, okay.

On the other hand, it ought to, small hydro, Sierra Club is one of my clients, is very nervous about expansive definitions of hydro in terms of new dams and so forth, but I think it's recognized that 30 megawatt and below part is a fair thing to call a renewable. The Legislature certainly thought so because we had that argument there.

On the other hand I don't know that you should encourage or anticipate that hydro should be eligible for financial support out of the public benefits fund. One, because it may not need it; and, two, because their public benefits are established through other means.

So those are examples that I would call out to you of how to approach this in a way that maybe helps wrenching conflict.

PRESIDING COMMISSIONER MOORE: Well, let's stay with the definition for just a second.

If I use the landfill gas as an example, the difficulty here is that you're talking in mathematical terms first order versus second order of derivative. You're saying that because the first order is gas that gets produced, that's renewable, and that, in the sense that it keeps regenerating itself based on landfill itself, and that ought to be the qualifier as opposed to someone who comes back in here and says, no, gas is one of those forms of energy which then goes on to turn a turbine or be part of --

MR. WHITE: I think in this case the difference would be the carbon

benefits that would accrue from the landfill gas versus from the regular gas. And I think if you added it to a fuel cell, the fuel cell, I would argue a fuel cell running on landfill gas is a renewable emerging technology.

PRESIDING COMMISSIONER MOORE: Yeah, but I'm looking for the simplest possible definition, and so I'm trying to get as close to the source as I can. And if we cut it off at the first order --

MR. WHITE: I would certainly not myself today attempt to resolve that argument. I just think there's merits to them being considered. And if you consider them as the definition of what is a renewable, I think that's a different process and criteria than whether they're eligible or deserving of public benefit support.

PRESIDING COMMISSIONER MOORE: For any money.

MR. WHITE: Right.

PRESIDING COMMISSIONER MOORE: We're on the same page.

COMMISSIONER SHARPLESS: How far do you go with that, though, John? And do you add in emerging technologies into the certification for renewables? You know, a very exotic.

MR. WHITE: The purpose of somebody being defined in emerging isn't to call themselves emerging, it's to get some money.

COMMISSIONER SHARPLESS: Right. I'm back to --

MR. WHITE: Okay. So if they're going to get some money, then they ought to be going through more than a definition it seems to me.

COMMISSIONER SHARPLESS: No. I'm saying I'm going with your argument and saying, you know, separate out the allocation from just the certification to participate in the market.

MR. WHITE: Right.

COMMISSIONER SHARPLESS: Because there's some advantage to that. It's unlikely that any emerging emerging technology would be able to take advantage of direct access, but you're talking about landfilled gases with fuel cells and that sort of thing.

MR. WHITE: I think that the truth in advertising part of this debate

and the customer disclosure of information about environmental impacts is separable from the allocation of customer support or low interest loans or production incentives or SRAC, or whatever combination of incentive.

You could have within those, you know, different other means, but I think finally if someone wants to call themselves emerging technology what your job would be to do be to certify that what they say about it is true, and that, in fact, there is a product being produced that's the same as advertised.

Which is what I think Ms. Hamrin's effort to sort of track the money was geared towards.

I think California has, you know, I mean I went to SMUD the other night, okay. And SMUD was discussing the down sizing of the public goods charge and the future that that would mean. And they called their system 41 percent renewable. Now, I didn't say, no, that's not renewable, you're lying. I just said please separate out the hydro from the non-hydro renewable.

Because we know hydro is by definition renewable but not the same thing that we're trying to get at with public policy. And I think, you know, people feel strongly about being able to call themselves what they think they are and to market themselves in that fashion.

The Legislature chose not to be as narrow as some people advocated.

On the other hand, I'm all for having the money being carefully spent for public benefits that need to be compensated, one, because there's an economic need to do so, and, two, because the market doesn't accurately reflect their value.

In the case of landfill gas, there is some internalization of externalities that has gone on by virtue of the regulatory process. Regulatory process has mandated that they not just vent this stuff into the air, and helping them comply with that regulation isn't necessarily something that needs to be subsidized in my opinion.

So I think there are different ways of evaluating. That's going to be part of, I think, some ongoing role for this Commission. Is to sort through the worthy but competing claims.

COMMISSIONER SHARPLESS: Just on your last point as well that

you brought up before and you've brought up again, but I keep wondering where it fits. And that is having the consumer have the ability to recognize environmental differences between technologies.

I'm not sure if you're saying that that ought to be part of a certification process, or if that's really a mechanism that goes with the marketing of these.

MR. WHITE: The answer is yes.

COMMISSIONER SHARPLESS: That was an either/or. That doesn't get a yes, John.

[Laughter]

MR. WHITE: I understand. The reason I brought this up is I wanted, I know that you're shutting down, but I wanted to suggest to you that this is a debate that is not yet resolved completely. David Moskowitz from the Regulatory Assistance Project, someone that I would suggest this Committee invite to make a presentation about proposals he's developing with DOE and others for a national electric labeling program that would not just be for renewables but would, in fact, be market wide.

I had the experience in the Conference Committee Report of raising the issue of emissions reporting into the power exchange and into the pool for all technologies because I think this is information that the market won't automatically collect unless we ask it to.

That issue was controversial because some of the market participants did not want an additional reporting requirement. One of the confidentiality issues that arose, came up in Ms. Hamrin's presentation, one of the confidentiality issues if a competitor is able to track the daily or monthly variations and output on a CO2 for example, that competitor might gain insights into that customer's business or that competitor's business that would put them at a disadvantage.

On the other hand, we know that EPA is already collecting from under the Title 5 Program, no, excuse me, Title 3 Program of The Clean Air Act a continuous emissions monitoring data on SO2, NOx and CO2. This Commission Staff has developed exhaustive data in the course of the ER development about permitted and actual -- I don't know about actual levels.

So there's data flowing around, and I'm just saying we need to think about getting that data to the customer as a part, maybe only an annual bill stuffer, not every month, you know, maybe. When you think of a fat label, I mean there's three different labels. There's Jan Smutny-Jones lowfat yogurt labels, so you want to be able to call yourself lowfat or renewables. That's a simple label and you got to be within a certain tolerance to call yourself that. It's simple. Customer gets it, doesn't have to read, you know, a whole sheet.

On the other hand, customers want to probably know, some of them, some of my group members probably, what the emissions profile is of the technologies that they're purchasing and what the fuel mix is. Is it nuclear? Is it coal? Is it hydro?

I mean so I think then you need, I think from an environmental standpoint, to track that, in fact, the system is staying within its overall environmental requirements.

I had a discussion with South Coast Air District the other day the future of all of Edison's reclaim tickets when they divest is an interesting question. Maybe we ought to buy them or shut them down because it might be cheaper, you know.

So there's a whole range of issues. I don't want to make the renewable discussion, and least of all the renewable certification project, burdened by more stuff than we need to get the thing started. On the other hand, I wanted to at least acknowledge for the Committee's purpose to think a little broader about where this whole thing needs to end up going.

Because I think we're going to need the rest of the market to provide a way of valuing what the renewables provide in a way that maybe isn't regulatory but is, in fact, allows for some value to be created.

I also think that the issue of the information flow to the customer and the means by which customers are contacted gets us into the unbundling area, which is not a subject of this Committee's jurisdiction at the moment, but a crucial part of being able to market successfully retail products.

So I didn't want to try to go too deep, but I wanted to at least on the

certification issue raise a couple things that I thought maybe you ought to keep in mind, and I hope that Staff would in developing their alternatives.

PRESIDING COMMISSIONER MOORE: Thank you, John. Yes.

MR. WOOD: I'm John Wood from Sithe Energies, and I humbly come before the Committee without prepared comments. Partly because of, of course, the many things that are going on in restructuring.

Sithe Energies is a large independent power producer worldwide, but our genesis was small hydro power plants, and notably in the West and in California. We have two small hydro power plants both below about three and a half megawatts that in spite of Mr. White's comment that will find it very difficult to survive in the deregulated environment.

And I think I'm here to suggest that those facilities should be under a policy of fairness, and equity should be considered as a part of the renewable package. And maybe logically the, essentially the fixed cost associated with a very small hydro power project are the most difficult area to view in a competitive marketplace, and possibly some kind of an annual gigawatt hour level of allocation or certification into the fund could be considered.

I have only recently begun conversations with some of the members of the renewable coalition, geothermal, wind and solar, etcetera, and will continue those conversations to the extent that it's constructive from your perspective. But anyway my comments specifically to small hydro.

COMMISSIONER SHARPLESS: Mr. Wood, I think it would be helpful if you would provide some of that data to the Staff so we could include that in the analyses. I don't know that we have that. Do we have that, Staff?

MR. MASRI: I don't think so.

PRESIDING COMMISSIONER MOORE: No. We've got several other people who want to speak on small hydro later in the day, so we'd ask you to just send us a letter then, and you have to pretty rapidly.

MR. WOOD: Thank you. Understood.

PRESIDING COMMISSIONER MOORE: Put in any numbers that you have.

MR. WOOD: Okay, thank you very much.

PRESIDING COMMISSIONER MOORE: Thank you. Gary.

MR. PATTON: Thank you, Mr. Moore and members of the Committee. Gary A. Patton, General Counsel of the Planning and Conservation League.

Your invitation to make certain that concerns were fully on the table as you move into your deliberative process stimulates me to jump up here and reenforce, essentially, what Mr. White was just telling you. And the reason I had not signed up to make the remark I'm about to make is that I didn't really see this as an issue of certification, but it could be considered as one.

There is a big difference, in my opinion, between certifying a provider of renewable energy under AB 1890 with a decision of how to channel the funds that you have before you for allocation. And I want to reenforce Mr. White's point that we believe in the environmental community it is critically important that just because you qualify as renewables doesn't mean you automatically get a full share or sort of an automatic cut of the pie that's available for allocation to support renewables.

And some of the proposals before you do suggest that that's really the way it ought to be done. We think the environmental quality and concerns of the renewable production are key.

I want to just draw to your attention, if you haven't remembered it, that I did write a letter to the Commission early in the process about specifically the environmental impacts that maybe accompanied certain biomass production, and that's the concern I want you to have in your mind as you're thinking about that difference.

I would also like to point out to you that respect to a long-term marketing strategy for renewable sources which are going to be attractive to ultimate consumers, maybe even in the business sector, but certainly in the direct consumer sector, because they're seen as being better for the environment, there is going to have to be some environmental review component of some kind so that you don't have the situation that ratepayers are suddenly going to be told you're subsidizing

this horrible proposal that, for instance, is cutting down headwaters forests to go into a plant, burn up the wood to generate "renewable energy."

That's just one kind of an example. They're true with wind power. They're true with other examples. And that is something in the allocation process we hope you will pay attention to. It's not, I think, strictly certification, but it's certainly certification for the purpose of getting funds. And there needs to be some mechanism to make sure that the externalities of the renewables are, in fact, positive and not negative.

Thank you.

PRESIDING COMMISSIONER MOORE: Thanks, Gary. You raise a good point. Obviously those of us on the North Coast, the headwaters would hopefully prove to be just a little bit too far away to have reasonable transport costs to get them into that.

But the other point that you raised, which is are you a member of the club, yes, okay; but just because you're a member of the club doesn't mean that you get to participate in the funding.

We said in one of the early hearings, actually Jan raised the point of a kind of a triage system where there are those industries that you could identify today that clearly don't need the help.

MR. PATTON: Mr. White made that point, and we agree with that.

PRESIDING COMMISSIONER MOORE: Right. And so, yes, they're a member of the club, they qualify. Mr. Grattan, for instance, may qualify. He doesn't want any money. So what he wants is the stamp that says, yes, you are a member of the club. Okay. And so that's one category.

And then there is this whole knotty thing, which is the purpose of the hearings, of course, to determine, well, you got a certain amount of money. For those people who do need it, how do you allocate it. So I think you raise and clarify and reenforce a good point.

MR. PATTON: Well, it just is a compliment to the Commission and Staff. I wish I had time to spend all my time working on these issues because they're so fascinating. But I really believe you're doing an excellent job at sifting through

the very knotty problems. And I'm going to be looking at that stocking horse and hopefully will love it.

PRESIDING COMMISSIONER MOORE: But you are.

MR. PATTON: Thank you.

PRESIDING COMMISSIONER MOORE: Thank you. All right.

Yes, and first here and then, Mr. Singh, we'll come back to you.

MR. WHELESS: My name is Ed Wheless; I'm here representing the Los Angeles County Sanitation Districts.

We've been kind of a pioneer in the renewable energy. We generated power first in 1938 with digesture gas, and then disconnected from Southern California Edison at our treatment plant. That treatment plant today has three solar mars gas turbines and does load following with digesture gas at about 15, little over 15 megawatts of power.

We also have developed landfill gassed energy projects, including the largest one in the world at our Puente Hills landfill. We have a 50-megawatt power plant there that's been operating for 10 years. It goes off the cliff next month. And we also have two other landfill gas power plants. One at 13 megawatts and another at 9 megawatts.

As far as the economics, it does vary a lot between for each site, even within the basin, because of the plant size. But I would want to at least indicate that we are flaring right now about 16 megawatts of landfill gas. And the reason we're flaring it is because it's not cost effective to generate power.

So I think that speaks the truth right there. We've been in the business for a long time. We've got operating plants. We know how to build them, and we know how to operate them. And yet right now we cannot proceed until something happens.

PRESIDING COMMISSIONER MOORE: Can I go back to your point. Puente Hills goes off cliff in December '96.

MR. WHELESS: In January. Yeah, this is the last year.

PRESIDING COMMISSIONER MOORE: Clearly, no matter what we did, if we just working at light speed, we wouldn't have anything on the books that

would even affect you in one way or another. What are the implications of that? Where, let's take out to December of '96 and the Legislature is just now implementing whatever we come up with -- '97, sorry -- and I don't know what that is, but what happens to you in the meantime? You've had no action, no support, plus or minus, from us.

MR. WHELESS: We're very fortunate for that facility being so large that it's very economical, and we'll continue to operate.

PRESIDING COMMISSIONER MOORE: So, off the cliff or not, it's still going to exist and will go forward.

MR. WHELESS: Yes. And I think what we're really looking for is support for the, the landfill, of course, is still open, it's still taking in 12,000 tons per day and still generating a gas over and above that 50-megawatt capacity, so we would like to add additional capacity.

We're a large energy user as well as producer. We produce about 100 megawatts in the plants I mentioned plus two refuse energy facilities that we're co-owner and operator of one.

But we also use a lot, 13 megawatts in our daily operations, and we would like to build this additional landfill gas, and then use that at our facilities around the county.

PRESIDING COMMISSIONER MOORE: Walk with me down the road of landfills in general for a second. I know that in Monterey County where I came from we had very serious discussions about the life of the landfills that we had down there, King City and in the valley. Every other landfill that I was associated with, and I don't know whether Gary had that in Santa Cruz or not, but every county supervisor's worried about what their landfill capacity is and when it gets reached. What's the implication of that once the facility maxes out for a long-term generation if you built a plant that functions symbiotically with that landfill and you reach capacity?

MR. WHELESS: Yes. In our case we've got a power plant operating in Palos Verdes that closed down in '84, and the power plant went on line somewhere around '88 or so. And because of the environment in California, in Southern

California, it's very dry, we have a very slow decay rate. In fact, we found the decay rate almost nonexistent, that it's been running relatively flat. And that plant, like I say, it closed down in '84, or 1980's when the landfill closed, and the power plant's been operating continuously since then.

At Puente Hills we have a permit to continue fill through 2002, and we hope to continue for another 10 years after that. So we see the potential at that site to not only continue operating the 50-megawatt plant, but over the next 20 years to add probably 45 or 50 megawatts of additional power. And that will be around for a long time.

At our other two landfills, Expadra [phonetic], we have a power plant there right now that was, we over estimated the gas supply so it's running at about 55 percent of output. And that landfill will close down in the year 2000. But still we think that the landfill gas itself will tail off at such a low rate that we'll probably be operating for a very long time.

PRESIDING COMMISSIONER MOORE: Very long time being? Can you attach a number to that for me?

MR. WHELESS: In the case of Puente Hills it's going to be, I'm sure it's going to be operating, we'll probably be producing power from landfill gas, if we have a market, for probably 30, 40 years from now.

At Expadra it's going to be a little bit different in that at the year 2000 we fall off the cliff of our contracts, it's a much smaller plant, the economics are a lot different, and we're probably go into some kind of balancing act to see what can we do to make it economic.

And where the market is. I mean, if we knew what the market was in the 2002, we would have a lot better answer to your question. But one thing we could do is just operate the plants at a lower load and find other ways to conserve costs, generating costs.

PRESIDING COMMISSIONER MOORE: So at the risk of being totally redundant, you're obviously in favor of a certification process clearly saying landfill gas is renewable.

MR. WHELESS: It certainly is a renewable. And as I say, you know,

right now we've got, we're flaring. All our plants that we have right now are under standard offer four, and we haven't built a plant since the standard offer four contracts were no longer available. We had thought that we were going to have the availability of those contracts on another landfill we have which is Cal Vasas [phonetic], and ultimately we did not get that.

So we've been flaring the equivalent of over 10 megawatts of power through that landfill now since '84 and '85, and continue to do it today and will continue to do it until it's cost effective to generate, you know, to build facilities there.

I might also add that as far as the recent statement on emissions that at our three plants, our three landfill plants, the power plant emissions are lower than the flare emissions. So when we shut our power plants down, the overall emissions actually go up.

And it's also another big plus is that it's distributed control, of course. We're right in the basin. In the case of the six megawatts, we would like to be able, like to add to our Puente Hills landfill. We have a six-megawatt waste water treatment plant across the street. And we would very much like to take that power and use it ourselves. But right now we're being offered about 2.2 cents a kilowatt hour across the street, I mean, you know, to generate the power, yet we're paying seven or eight cents across the street to buy it from the Edison.

COMMISSIONER SHARPLESS: This money, if it were to go to landfill gas generation, would it be used to help improve the operational, rather lower the operational costs of the facility? I mean, what's going to happen in four years after the money is gone?

MR. WHELESS: That's the way we see this right now. We would like to see something like a CTC rebate. We haven't talked about that part of AB 1890 yet, but that would --

COMMISSIONER SHARPLESS: We who? We haven't.

MR. WHELESS: This working group.

COMMISSIONER SHARPLESS: Oh, yes, it's been hashed around various different times. Rebates are definitely on the table.

MR. WHELESS: I think we would like, we would see that as the best solution for our needs in that if we did receive a rebate for the CTCs of the new power generation, we would definitely use that added incentive to buy down capital costs of those plants to be able to better compete in the market, in the true market when it arrives.

COMMISSIONER SHARPLESS: So your biggest costs are front end capital costs versus operating costs?

MR. WHELESS: That's correct.

COMMISSIONER SHARPLESS: Thank you.

PRESIDING COMMISSIONER MOORE: Thank you very much. Anyone else? Mr. Singh, you wanted to speak on certification?

MR. SINGH: My name is Kirpal Singh. I was going to keep quiet, but a couple of important points came up about certification.

I have my proposal in front of you for certifying tires. Also for being able to sell energy from Arizona into California, but the State of California will not permit me to burn anything here.

I was told last week the only three things I can burn in California, tobacco, crack and marijuana. Anything beyond that is not allowed.

My emphasis in getting it accepted for the tires in California, because we have about 30 million tires lying on the countryside, and I'm told by the Waste Board that about 10 million added to that pile every year. Fortunately, my team and I do not need to be put on life support system at anybody else's expense. We can generate electric and sell it competitively anywhere.

Thank you.

PRESIDING COMMISSIONER MOORE: Thank you, sir. Yes.

MR. BROOME: My name is Kenneth Broome, and I represent Power Wheel Corporation. They are a small hydro development and manufacturers.

And I'd like to make the point that small hydro is not a fully developed technology. That there are new ideas that are emerging and would require consideration by the Commission in two or three different ways.

One, of course, is we need some kind of help to encourage private

investors to join us in doing a demonstration of the new technology.

I don't know how long you would like me to spend describing what it is that's different about it, but I can do so in a very short way if you'd like to know why it's different.

COMMISSIONER SHARPLESS: Is this the Power Wheel?

MR. BROOME: Yes, it is.

COMMISSIONER SHARPLESS: Yes, we received that.

PRESIDING COMMISSIONER MOORE: We did get it in the docket. At this point, it would probably be preferable to contain your comments to the certification process. And if you're supporting the idea that small hydro ought to be certified as renewable, this is probably the --

MR. BROOME: That's what is the other point I wanted to make.

That small hydro, I think, justifies certification as a renewable and as one that is deserving of financial support, either in rebates or otherwise. But our objective is to make it commercially viable within the next three or four years so the rebate is short lived. I think in a sense of once it's fully demonstrated it can take its place in the competitive marketplace.

I'm not as familiar as I should be with the certification discussion, but if there's any questions you'd like to ask me as to how we could justify our place in that, be pleased to try and answer them.

PRESIDING COMMISSIONER MOORE: Thank you. Appreciate it very much.

MR. BROOME: Okay.

PRESIDING COMMISSIONER MOORE: Okay. What I'm going to do then is switch gears, and we're going to go into a couple of presentations. I should tell you it's my intention to take a break at 11:55, five minutes to 12:00, and we'll then reconvene at one o'clock.

So I have three allocation proposals in front of me, and if I call on Bob Judd, Nancy Rader, et al, can you present to us in 15 minutes? No. Okay. Les Nelson, can you present to us in?

MR. NELSON: Unfortunately not.

COMMISSIONER SHARPLESS: Maybe we could start.

PRESIDING COMMISSIONER MOORE: Well, we'll do just that. Mr. Judd and Ms. Rader, we'll start with your group, and we'll go as long as we can, and then we'll pick it up after lunch.

All right. Mr. Judd, you have the floor. Do you want the table up here? Do you want to bring everyone up to the front, or do you want to come in sequence?

MR. JUDD: Good morning, Commissioner Moore, Commissioner Sharpless and others. My name is Bob Judd. I am here to offer introductory comments regarding the renewables industry consensus proposal that has been submitted to you.

The format that we would like to follow today is to allow me to offer a brief overview on this, and then each of the technologies represented in this consensus proposal has prepared a detailed explanation of the allocation methods that anticipates questions you might have and response to questions you had last week.

It is very hard fact based, and I would imagine that each of the technology proposals will take in the range of 15 minutes each. And then questions that you might have.

We have put a lot of effort into this over the past week. So if I might go ahead with the overview briefly, and then we'll see where we stand at that point.

Last week we promised you additional detail on the framework we've presented in Oakland. Today we will deliver that detail. Last week you raised a number of questions. You will have others today, we're sure. Today we are prepared to respond to all questions at any level of detail that you have.

Each of the parties to this consensus will present an explanation of its element of the proposal. Bill Carlson will speak for the biomass industry. Nancy Rader will speak for the wind energy industry. Jonathan Weisgall will speak for geothermal. And Eric Wills and others will speak for solar thermal.

We recognize that any proposal that will be acceptable to you has to fit the specific requirements, the purposes of AB 1890 with regard to the allocation of

funds collected to support renewable resources. We believe that our consensus proposal serves these purposes and serves them far better than other proposals that have been put forward to date.

If I could refer you quite briefly to the proposals of the renewables, purposes of the renewables fund, as they are articulated in Section 383, they're quite clear.

Support the operation of existing and the development of new and emerging instate renewable resource technologies, support the operation of existing generation facilities which provide fire suppression, landfill and mitigation of open field burning benefits, and support the operation of existing innovative solar thermal that provide peak generation and reliability benefits.

In the development of the industry proposal and the many days of meetings that have resulted in this proposal, a set of principles have emerged. I'll refer to them as the Ten Commandments because, in fact, there are ten of them, and they have guided our efforts.

They are consistent with AB 1890, and in your handout you have them so I won't labor on them, but obviously principle one is to comply with the purposes of AB 1890 regarding the allocation of funds.

Number two is to transition the renewable industries through a possession of competitive market readiness in 2002.

Present the Energy Commission with a coherent solid industry consensus, which we will do.

We have recognized that each technology sector has a unique set of circumstances and needs.

We have recognized that you maximize the benefits of renewables by maximizing the generation of renewable kilowatt hours and instate benefits.

We also recognize that it is imperative to maintain and improve California's existing renewable resource base and the infrastructure that supports it.

Our proposal will encourage cost reduction in each technology sector.

It will meet the test of AB 1890 about the allocation of funds in the 4040 provision.

Our proposal as described in previous submissions will develop and support an effective certification program, and we will develop through our proposal an aggressive and permanent public education and green marketing program to compliment other efforts that will be made.

Who are the parties to this industry consensus. It's presented by and supported by all generators of renewable resource electricity from biomass, geothermal, wind and solar thermal. The parties to this consensus represent more than 90 percent of the total renewable energy generated in California. These companies are the same companies likely to be at the forefront of any new renewables development in California.

Briefly, these parties own and operate and install base of over 3500 megawatts of electric capacity, including base load and peak load facilities for system reliability.

These parties have a combined capital investment in excess of six and a half billion dollars in California, plants on the ground since the mid 1980's and account for approximately 5200 current jobs in California, mostly in rural California.

Your packet will also show you the profile of the participants in this package in terms of the number of facilities, their megawatts of capacity and the gigawatt hours generated by each.

A hundred and forty-seven separate generating facilities in the state generating slightly over 3500, or having the capacity of over 3500 megawatts.

I will now show you on the screen and refer you in your table to the allocation proposal that we have done. I will ask that you hold your questions on the allocation method until you hear the presentations from other parties. But as you can see in our proposal, we clearly meet the 40/40 split. Each of the parties, and the parties at large, will explain to you why the allocation has been derived in this manner.

Briefly, and not in your packages, another portrayal of the allocation of funds on a pie chart basis.

The elements of our proposal are consistent with and address all of the principles that we've laid out for you. As you listen to the proposal elements here

from the various technologies we ask that you keep these principles in mind because it is these principles upon which our consensus proposal was built.

If our proposal at the end of the day is fully responsible to the purposes of AB 1890 as with regard to the allocation of funds, and if it is fully responsive to the principles that we have outlined before you, we feel that we have met the challenge you set out for us a month ago.

COMMISSIONER SHARPLESS: I think that this is of nature, Mr. Judd, that falls within the umbrella comments. You say all renewable energy categories, and yet we've heard this morning some renewable technologies that are not included in your proposal. Would you care to comment on why some are not in there and which ones those might be?

MR. JUDD: I would. The proposal that we have submitted to you and the detail that you will hear today represents the proposal put forward by the biomass industry, the wind industry, the geothermal industry and the solar thermal industry. It does not represent at this point interests of other parties who have arisen to speak this morning. Such as the landfill gas participants.

As you see, and as you will hear more from the solar participants, there is a portion of the funding set aside for emerging technologies that would include funding for emerging solar technologies that are not part of our proposal at this point.

COMMISSIONER SHARPLESS: And hydro.

MR. JUDD: Hydro is not a part of our proposal at this point. We gained new information this morning, both from them and from landfill gas, and perhaps they should be considered as part of the other category that is not represented in our proposal specifics.

COMMISSIONER SHARPLESS: So is the answer to my question that these people didn't come forward and that's why they weren't included, or that in the opinion of those technologies that currently have put together the formula they didn't perceive them as being a part of the need?

MR. JUDD: No, that's a fair question. We have allocated funds in this proposal for some of the technologies that have come forward. We have discussed

with the Union of Concerned Scientists and last week with SEIA their needs on this. So they are covered by the allocation that we propose but are not part of our proposal.

We felt in the case of the Solar Energy Industries Association that the proposal they put forward was so different from the proposal that this consensus group put together that closing the gap would have been very difficult.

We made our best estimate of revenues that they needed to meet the goals that they had expressed. In the terms of landfill gas and hydro, the fact is that they have not come forward with us to seek participation in this proposal.

COMMISSIONER SHARPLESS: What do you suggest we do about that?

MR. JUDD: I think we need to talk more with them. I think it comes back to what other parties have said today that if there is a segregation, if you will, for facilities that can get certified and then a finer filter for facilities that are eligible for the funding, it may be that some hydro facilities and some landfill facilities can demonstrate a need. And in that case, that would have to be taken into consideration.

COMMISSIONER SHARPLESS: And on your sheet that you show allocation table, I'm not going to ask specific questions about the numbers because the individuals will do that, but the percent for new includes emerging, correct?

MR. JUDD: Yes. Yes, it does.

COMMISSIONER SHARPLESS: And so each individual technology has a plan on how to divide the new and the emerging.

MR. JUDD: Yes, it does, although --

COMMISSIONER SHARPLESS: And that's why you haven't got three. That's why you've got two, is because the emerging is treated differently?

MR. JUDD: I'd prefer each technology to address that. In the case of the biomass industry, for example, there is a no emerging, and there would not be. Other technology groups may differ within that regard. But the emerging category here primarily is an allocation for emerging solar PV and other related projects rather than within our technology categories.

COMMISSIONER SHARPLESS: Okay.

PRESIDING COMMISSIONER MOORE: Solar thermals in solar voltaic is out in this proposal.

MR. JUDD: They are both in the allocation table. Solar thermal is a party to this proposal. Solar photovoltaics, at this point, is not a party to this proposal. But they are both, there is funding allocations recommended for both.

PRESIDING COMMISSIONER MOORE: Thank you, Mr. Judd.

Given that, what I'm going to do, Marwan, do you have?

MR. MASRI: Yeah, I do. I have a quick one. Bob, this proposal does not allow for any customer rebates from the fund; is that correct?

MR. JUDD: You will hear in proposals from some of the technology groups that present this afternoon recognition of consumer involvement. In the case of solar thermal and in the case of the biomass industry, it does not include a consumer refund component.

PRESIDING COMMISSIONER MOORE: All right, thank you.

With that, we're going to break for lunch. Be back here at one o'clock with whatever order, Bob, that you've set up, then we'll go with that.

[Luncheon recess from 12:00 pm to 1:10 pm.]

PRESIDING COMMISSIONER MOORE: As to all, I had intended to be back here by 1:00, I'm sorry.

I'm going to encroach on Bob Judd's time just a little bit and ask Bob Aldrich of our Staff to talk about the Web site that we run and how to get access to information that's on it. Apparently Bob has very cleverly hidden it with a password that he's going to tell you about and let you know how to get that information off. Bob.

MR. ALDRICH: Thank you, Commissioner Moore. My name is Bob Aldrich, that's A-l-d-r-i-c-h, and I'm the Commission's Web master.

Actually we have not hidden the information. Hopefully it is easy to find. The address for all of the restructuring information is HTTP, hypertext transfer protocol which is what your Web browser uses to connect, colon, and then two forward slashes and then www.energy.ca.gov and then a forward slash and then

the word “restructuring,” (http://www.energy.ca.gov/restructuring).

That page lists all of the information on restructuring that we’ve put on the Internet on that one page. If you browse down on that page, there is a section called AB 1890 implementation. And in there all three of the committees: The ones that are looking at irrigation districts; ones looking at renewables; and ones that’s looking at research, development and demonstration, demonstration and development, all have their own link to their individual pages.

On those pages there are links to all of the transcripts that are currently, any of the hearings or conferences or workshops. We typically get those transcripts between three and five working days after the hearing itself. And we try to have those transcripts up on line as soon as we receive them.

Sometimes depending like on Friday, for example, we got the transcript late on Friday afternoon, and we have the transcript for the hearing on the 19th up on Saturday. So we try to have those on line as quick as possible.

They are available in what’s called ADOBE ACROBAT Portable Document File, which is the easiest way to down-load one file for a multiple number of different types of computers. Whether it’s a Unix computer, a MacIntosh or a PC computer. There is free software that’s available from ADOBE Corporation. We have a link to ADOBE Corporation so you can download the software to put into your Web browser to be able to read those transcripts.

As to filings, currently we have not received any electronic filings from any of the people who are making presentations at the hearings. We have not put up any filings because we need to have them in electronic format in order to put them on line.

What has been handed in so far have been mostly paper copies, I believe. I have yet to see something that’s been handed in on paper and also on diskette.

As soon as dockets receives an electronic filing, whether it’s an attachment to an E-Mail information that’s sent to dockets, or whether it’s on a diskette, they would send it to me, and then we would put it up within a business day of receipt. So once filings are sent in and done that way.

We have talked about actually taking paper filings and converting them to an electronic format. The problem with doing that is that you have to scan the paper documents in, and there are problems with the way that what's called optical character recognition software will take and read that information and then put it into an electronic form. There could be problems with typos, there could be errors in misspellings, commas, some numbers could be incorrect, so there's a real problem in doing that. So we would prefer if you are going to file something, to file an electronic version.

You can file it as a word processing document, but you could also file it as an ADOBE ACROBAT document which makes it easier for us to put up on the Web.

The Committee is yet to make an official order regarding electronic filings, and I imagine they'll probably consider that sometime in the near future.

For those of you who follow the ER 96 hearings, there was an order that had come out with the Electricity Report 96 on electronic filings that detailed out all of the information you would need to know about doing an electronic filing. And I'd urge you to take a look at that if you're interested in it.

Any other questions?

PRESIDING COMMISSIONER MOORE: Thank you, Bob. Appreciate your help.

MR. ALDRICH: My pleasure.

PRESIDING COMMISSIONER MOORE: And obviously if you want your work to be accessible to everyone, it's going to be a help to Bob if you submit it in electronic digital form.

MR. ALDRICH: Commissioner Moore, if I could say one final thing.

If you have any questions about the Web site or if you have problems with it, please don't hesitate to give me a call. My phone number is area code (916) 654-4993. My E-Mail address is boba@energy.ca.gov. So I would be happy to help you out if you're having problems. Please don't hesitate.

PRESIDING COMMISSIONER MOORE: Thank you.

MR. ALDRICH: Thank you.

PRESIDING COMMISSIONER MOORE: And with that, I'm going to return back to Mr. Judd and Ms. Rader, et al., and thank you. You have a clarifying comment you'd like to make.

MR. JUDD: Yes, I do, Mr. Chairman.

On the chart we showed on the view graph that Phil would put up, Commissioner Sharpless raised a question that made us realize that we didn't express ourselves very well.

On this chart the second column that says "percent new," should really say "percent new and emerging." The four lines, that is solid fuel, biomass, geothermal, wind and solar, their proposed allocations are in effect for existing and new.

The proportion of fund allocation for emerging, and we believe it's primarily for photovoltaics, then falls into the category called "emerging," and that would be eight percent of the recommended allocation.

PRESIDING COMMISSIONER MOORE: Thank you.

COMMISSIONER SHARPLESS: That's under which? Which was the eight percent? Oh, the emerging?

MR. JUDD: Yes. And then at the top of the column where you see that number eight, it should say "percent of new and emerging." But recognize that in the four existing technology groups, the money will go for new rather than emerging. We just had to differentiate, try to differentiate between those without putting a separate column in.

COMMISSIONER SHARPLESS: Okay.

MR. JUDD: I'd like also just to clarify a final point before I turn it over to Nancy. In the group, the alleged gang of eight that put together the industry proposal, there was an important function that they undertook that I didn't express. And that is they were self-policing. That is each of the parties in there needed to satisfy itself that the other parties had a demonstrated need for funding under the renewables fund. None of the parties wanted other parties in there who could not demonstrate that they had a need for support during a transition period.

Discussions were held in that group regarding such other players as

landfill gas and small hydro, and for a variety of reasons that you will hear it was decided within the group that there was no demonstration of need for transitional support for those industries.

Now we've heard allegations this morning from some parties in some of those industries that they may need support, and that may require investigation; but for our purposes and with the knowledge we had, we assumed landfill gas was a mandated requirement supported in many cases by tipping fees and by a federal tax credit, that it would not need support out of the fund.

With hydro, with the multiplicity of purposes it serves and the free fuel that it receives and absent information to the contrary, we did not include them as well.

PRESIDING COMMISSIONER MOORE: Thank you.

Ms. Rader.

MR. JUDD: So I'll now turn it over to Nancy for the first of the four presentations.

MS. RADER: Nancy Rader, American Wind Energy Association.

I'm going to give hopefully a brief overview of the proposed allocation mechanism for wind resources. And then what I'd like to do is for you to hear briefly from two of our member companies, FloWind and Sea West. Obviously I think it's important to understand from the industry from the business point of view why our allocation mechanism works for the industry, and they can best tell you that.

But first let me just overview the proposal. First by giving you the back drop, which is the current status of the wind industry. About 70 percent of current, of total wind capacity in the state, is first and second generation technology. Less than 30 percent can really be considered state-of-the-art technology.

A large fraction of that early technology really requires repowering or retrofitting to be economic in the post transition period. And much of that capacity is, in fact, not economic now if the projects have fallen off their cliff.

Those repowering and retrofit improvements can dramatically reduce O&M costs, increase the availability of the turbine and increase the production of

kilowatt hours. And all of those things significantly improve the economics of the projects.

Repowering and retrofitting is far more cost effective than developing a brand new project because the existing infrastructure is in place, and that requires a much lower incentive in order to accomplish repowering or retrofitting than what would be required to stimulate a brand new project.

The current payments, as I mentioned, under the post cliff pricing are simply too low and too uncertain to maintain and to make capital improvements to projects that are off the cliff. So what we're seeing in our industry now is that companies are reducing their O&M expenditures. They're simply laying off O&M staff and major repairs are not being made.

And so what is happening is as the turbine needs a major repair, it is not repaired, and then the rest of the turbine is what they call "cannibalized" for parts to repair other turbines.

And so what we're seeing is a gradual erosion of wind capacity in the state, and I think I've mentioned before I think we've lost on the order of 150 megawatts up to date. And what that also means is that jobs are being lost, and our base of industry expertise is eroding. And that's very important. Because if this industry is going to be around to grow, we need to maintain those skills and the knowledge base that rests in the individuals that work in the industry.

What we're also seeing in the industry is a cut back of operations during off peak periods. So a lot of the turbines are simply not being run during off peak periods because the wear and tear on the machine, plus the O&M costs, just doesn't justify what they're being paid. And that means we're getting fewer clean kilowatt hours from wind energy.

And what it also means is that the companies have a limited ability to pursue new markets to advance the technology and to conduct R&D. And we've seen a lot of cutbacks in what companies had been doing in the past.

And let me just say that I think that goes to your question also, Commissioner Sharpless, about what is this industry proposal looking to do. And I think what our industry proposal is looking to do is maintain industries that are at

risk. And I think the wind industry is one that is truly at risk.

And I think we don't see the same with the landfill gas industry, which in fact there's not really an industry, it's pretty much standard technology that is simply applied to landfill gas. And though they may need funds, I think there's not the same risk of an entire industry in a completely different know how that's at stake.

So then to get on to our proposed allocation, what we're proposing to allocate the wind funds, first as an overview, it was developed by a group of four of our largest companies. The objectives of the group was to reverse the current decline in wind energy production and in capacity that we're seeing, to maintain current operations and to enable capital improvements, to avoid delay in controversy in the allocation of funds.

And that is critical because the industry is now hurting and really can't afford delays without further erosion occurring.

And we wanted to serve the needs of most of the operators, including our smallest companies. And there are some very small companies still involved that really can't afford to participate in expensive bidding procedures and things like that, even though they may be as economic as anybody else.

And I think those objectives are important to keep in mind because it's those same objectives that we will use to measure our support of other proposals. And I think the other proposals simply just don't meet that set of objectives.

To meet our objectives we have proposed a simple --

COMMISSIONER SHARPLESS: Excuse me, Nancy. What other proposals?

MS. RADER: The other proposals that you've heard from the other parties. Working Assets and others.

COMMISSIONER SHARPLESS: Oh, the other proposals outside of this coalition proposal.

MS. RADER: Yes, thank you.

We don't see any of those proposals being able to reverse the decline in wind production in the same way that this proposal would.

So what we're proposing is a simple per kilowatt hour production incentive that is paid to eligible wind projects. And we would define "eligible" as projects that are operating under existing contracts, contracts that have been bought out and that might be for purposes of green marketing.

I think there's a strong belief in our industry anyway that if green marketing is going to happen with wind, the way it will happen is for existing contracts to be bought out by green marketers. Much less likely to build a new project. And again because it's much cheaper to get wind that way.

Also eligible would be repowered and retrofitted projects, project additions and new projects.

Projects not eligible would be projects within a fixed energy price period of their standard offer contract and projects that sell their output to or are owned by municipal utilities unless the municipal utility participates in this program.

COMMISSIONER SHARPLESS: Can you give us a breakdown of how much falls in what category? Those that are currently would qualify under your qualifying provision and those that wouldn't?

MS. RADER: Yeah. I don't have the figure off the top of my head. I think it's somewhere probably in the order of, probably on the order of 70 to 80 percent currently. And then by '98 most of our projects have fallen off their cliff, but there's a few that don't fall off until the year 2000 or 2001. But I can get a more precise number for you.

We have a proposal that the Energy Commission distribute the funds on a monthly basis based on actual production.

The incentive would be determined by, the amount of the incentive would be determined by dividing the total funds allocated to wind into 12 monthly sums based on historical production of wind energy on a monthly basis.

Then we would divide that monthly fund by the eligible wind kilowatt hours that are produced and cap the incentive at one cent.

We estimate based on this approach that, and this is based on an industry survey that we, stage one of which we have completed, we're in the process

of completing stage two, but we estimate that with 23 percent of the funds being allocated to wind that that incentive would be no less than 0.65 cents per kilowatt hour depending on the increased production.

So that figure assumes that overall wind production increases by 30 percent because of the repowers and the retrofitting that occur. That is our maximum estimate for how much repowering might occur, and that would drive the incentive down to 0.65 cents.

COMMISSIONER SHARPLESS: Would increase over what baseline?

MS. RADER: Over current, actually I guess over 1995 levels.

COMMISSIONER SHARPLESS: Which is 150 megawatts down from the peak of where wind power was?

MS. RADER: Actually I think it's probably a little higher because I think we've lost some in '96.

COMMISSIONER SHARPLESS: So it would be 35 percent higher from a 1995 baseline?

MS. RADER: About 30 percent higher would drive the incentive to 0.65 cents. So the incentive would then range, could range, between 0.65 cents and one cent. But those would be the bounds that the financial community could count on the incentive being. And that's the most important thing is that the financial institutions be able to know with certainty that there's going to be X amount of revenues coming in. That's really the most important part of this proposal.

COMMISSIONER SHARPLESS: So this is like a production credit. This is what you're talking about.

MS. RADER: It's a production incentive, yeah.

Other important points on our proposal is that retrofits and repowers would be defined as new per the IRS definition.

In other words, if you qualify for the federal production tax credit, and they have a definition of what is new, that same definition we would apply here because in fact that is new technology that isn't applied in repowers and retrofits.

It's important to determine that the incentive does not count against the federal production tax credit, and I'll say a few more words about that later. And

it's also would help if the legislation were enacted sooner rather than later in the 1997 session because then people know that it's in place -- and you're laughing. Good luck, I know.

But if that were to occur, people could get started on the financing of the repowers and have them, you know, being constructed by January of '98.

What we expect to occur because of this production incentive is that we could repower between 40 and 70 percent of total contract capacity either through repowering or retrofitting. And that's about 640 to 1120 megawatts. And that repowering and retrofitting would result in a 20 to 30 percent increase in total kilowatt hours from wind, and that's because the new equipment is much more efficient.

And because of that, if you just do the math, that results in 50 to 75 percent of the total kilowatt hours being from those new or repowered or retrofitted projects. So that's, we took the midpoint of that 50 to 75, and that's what we put in our table, this split between existing and new, is the midpoint between our low and our high case.

The rationale for the approach is that the production incentive will enable and encourage repowers, retrofits and repairs to occur. It will allow companies to pursue R&D, to pursue advanced technologies and/or to investigate new market opportunities, which as I indicated they're not in a very good position to do right now.

COMMISSIONER SHARPLESS: Nancy, could you just clarify something for me, I'm sorry. What is your definition of "new"?

MS. RADER: Anything that qualifies for the federal production tax credit. And they have a definition that I think I pretty well, I don't think I put quote marks on it, but it's pretty much defined in our proposal.

COMMISSIONER SHARPLESS: So some repowering would be existing and some repowering would be new, depending on whether or not they met the tax definition?

MS. RADER: Yeah, though in almost all cases repowering would qualify for the PTC. There is, I think, retrofitting is more the gray case because with

retrofitting you just take some major components and replace them with upgraded components, and it has to, 80 percent of the value of the new turbine has to be new in order to qualify for the production tax credit. So that's.

PRESIDING COMMISSIONER MOORE: Well, just on that vein, so if you have an existing pole and you put a new turbine on it, under this definition it would qualify as new?

MS. RADER: If 80 percent of the value is from the new parts, as I understand it. And those questions are better directed at the industry folks that are going to come up in a minute.

COMMISSIONER SHARPLESS: Eighty percent of the value of what? Of the capital construction?

MS. RADER: Of the entire, if you take the entire pad and tower and turbine and blades, 80 percent of the value of that has to be from the new components as I understand it. But maybe my, okay, they're nodding, I think I got it right.

The paying the incentive on an across-the-board basis has a lot of advantages. One is that it allows companies to apply the revenues where they're going to be most needed and where they will most effectively position the company for the post transition period.

In other words, they can look at a turbine, they can look at their project on a turbine-by-turbine basis and decide does this need a retrofit or a repower or what is it now that we have the cash flow to support what it is, and allows them to do what they need to do.

It avoids controversy and delay in allocating the funds. And again, that is critical. And it's also critical to give the financiers of these things the certainty that this payment is going to be there.

COMMISSIONER SHARPLESS: Nancy, I hate to keep interrupting you. Controversy and delay, as it relates to permitting requirements? As it relates to what?

MS. RADER: As it relates to the allocating the money. What we want to avoid is a processes that could be contentious bidding procedures or having to

rely on marketers to sign up customers, where these things can really delay the flow of funds and the certainty about whether those funds are going to be coming.

What's critical to these companies is that they can tell the bank that X amount of income is going to be coming in for kilowatt hour. That's the only way they can get financing to do repowers and retrofits. And so if we're relying on --

COMMISSIONER SHARPLESS: That's over a four-year period though.

PRESIDING COMMISSIONER MOORE: No, she's talking about at the front end.

MS. RADER: Well, I'm saying that in order to do repowers, in order to get the financing to do repowers and retrofits, the people that are fronting the bucks have to know, they will not front the bucks unless they know, and some of my companies refer to them as the steely-eyed bankers, they have no sympathy for claims about green marketing or, you know, we're going to sign up all these customers, doesn't matter, they need to know that money is coming in to repay the debt.

And that is why this proposal's a production incentive, and it's not relying on other parties to sign up customers or to, it doesn't require people to go through a bidding process and those things that are going to take a lot of time and it's going to result in capacity going off line and potentially cause companies to go bankrupt while they're waiting for the funds to come through.

That's what we're trying to get at with that point. That, you know, the production incentive is certain, it allows the companies to be able to rely on it and for their financial partners to rely on it.

PRESIDING COMMISSIONER MOORE: Nancy, let me interrupt for just a second.

I'm watching the clock, and I'm going to have to make a determination here, and it will apply to us as well because we won't be able to stop asking questions obviously because we need clarification as you're speaking. But I'm just going to, we started at 15 after, and I'm going to go, because I didn't announce this until later, I'm going to go until 10 after with the group.

I'm going to ask you to caucus, you know, informally as you do that, and we'll stop. Because I have two other groups that want to do similar presentations, and I want to allow them enough time. And I have a large stack of cards for folks who want to talk on more general topics.

So I'm going to ask you to condense it as much as you can. That gives you, Nancy, another what amounts to 30 minutes to do stuff with your group. So I'm going to take my comments away from you here in terms of time.

COMMISSIONER SHARPLESS: I think he's just admonished me.

PRESIDING COMMISSIONER MOORE: No, I haven't. Because I know there will be questions that come up, and I'm going to be as flexible as I can, believe me. I'm just trying to imagine that we have two other groups that want to present, and we --

MS. RADER: Well, what I think I would prefer to do then is to abbreviate my comments and let you hear briefly from the companies because they have traveled all the way here, and I really really want to hear from them.

PRESIDING COMMISSIONER MOORE: I'm not trying to cut anyone off. I'm just trying to manage the time.

MS. RADER: That's all right. But in order to leave time for everybody else, I'd like to defer the rest of my time to the folks that I've brought here from the industry. So first is Rob Harmon from FloWind.

MR. HARMON: Hello. I'll be very brief.

FloWind is one of the larger wind power companies in California. We sell power to investor owned utilities under SO4 contracts. All those contracts are now off the cliff.

We support AWEA's proposal. I won't go into the details of why, but the primary reason is because it provides a level of economic certainty that will significantly increase the number of facilities that are repowered with new wind powered technology.

AWEA's proposal is one of a number of proposals currently before the Commission. Some of these proposals either conclude or assume that a substantial number of existing repowered and/or new wind projects are economically viable

under existing market conditions in California. Those conclusions are in sharp contrast to the reality being faced by the wind industry today.

For example, FloWind has begun removing older wind turbines that are not cost effective to operate under existing economic conditions. FloWind will continue to remove older wind turbines as their O&M costs increase. If current economic conditions persist, we will likely remove over 90 percent of our fleet over the next five years.

As these older turbines are removed, O&M staff is reduced, property tax payments decrease and promising local renewable energy industries decline.

FloWind hopes to repower all of its existing wind power facilities over the next four years. FloWind's AWT series of advanced wind turbines will be used. These turbines were developed in collaboration with the US Department of Energy's National Renewable Energy Laboratory and represent the state-of-the-art in wind power technology. Repowering our existing sites with this new technology will approximately double the energy output from these facilities.

Under existing market conditions, as Nancy said, it is difficult to obtain financing to repower even those wind sites with the highest annual average wind speeds. With the additional financial support suggested in AWEA's proposal to the CEC, FloWind would likely repower between 50 and 100 percent of its existing facilities, depending on market conditions.

In conclusion, we support AWEA's proposal because it accurately represents the difficult financial situation facing the wind industry during the transition period. Existing repowered and new wind power facilities are all in need of financial assistance during this transition period, and the production incentive as proposed by AWEA paid to the generators of wind energy is the most cost effective use of the funds available under AB 1890.

Thank you.

PRESIDING COMMISSIONER MOORE: Fine. Nancy, you have another person who wants to come up?

I might just add a point on wind power, and that is the question that you know will be in our minds as we consider this. And that is the fact that over

the last 10 years or so, at least from what I've been hearing, is a great decline in quality as O&M were put off. And yet there was a subsidy going on the whole time.

You have to ask yourself if you're in my seat why a production credit, which goes in, would go in to support an industry to repower that hasn't demonstrated that it would use the money that it had that was supposedly allowing it to become competitive. It didn't use that money to keep adequate O&M standards in place.

So you have to be asking yourself, and we will be asking ourselves, why that situation wouldn't reappear and why the production credit that we gave might not dissipate because it wasn't adequate to cover O&M in the future years.

So that, I just want to raise that, is a question that we'll be facing as we go on.

MS. RADER: Just while Steve's coming up, let me say I think one of the big reasons is that you have to keep in mind that the early technology was pioneering technology that was two to three to four times the cost of the technology today, and so there was a lot of debt to repay.

PRESIDING COMMISSIONER MOORE: I understand. Still has to be maintained though.

MS. RADER: Right.

PRESIDING COMMISSIONER MOORE: Still got to be maintained over time.

MS. RADER: But what's happened is the technology's improved greatly, and that's what we're trying to do is install the new technology that has a much lower O&M costs. So I just want to say I do have an answer for you, and I'll flesh it out later.

PRESIDING COMMISSIONER MOORE: Good. Thank you.

MR. THOMPSON: Hi. My name is Steve Thompson. I'm with Sea West Energy Corp., another large wind energy developer and operator.

You will be pleased to know that I have been liberally slashing through my notes in respect of the time situation. And I almost got the sense that Rob has been looking at our various financial performers and whatnot because a lot of the

numbers that he alluded to are very similar to what we're experiencing. And we are, in fact, also pulling down turbines.

One of the differences, and I'll just kind of focus on differences between, for instance, Sea West and FloWind, we perceive that Sea West has essentially two options right now or a combination of the two options. That would be to either repower or to retrofit existing projects.

A repower, the reason that the adder would be a critical, and I wanted to touch a moment on the timing issue, the adder is critical in conjunction with the production tax credit. We need to have both in order to do a repower. And the timing on the production tax credit, as you know, is rapidly running out. We have until July 1, I think, 1999.

So in order to have certainty on the production tax credit and the adder, we need to move very quickly on understanding whether the adder's going to be there or not.

The problem for, and I wanted to address Mr. Moore's concern about the, you know, where all the fixed price excess revenues have gone, I can say that in our own case at Sea West we saw a lot of that money going in to paying off debt for the original high costs of the product. We also spent considerable amount of monies on all of our projects throughout that ten-year period on retrofits, retrofits that I'm aware of, so it did not all go to bottom line, I can assure you that.

Getting back to my notes, Sea West right now has been able, all of our projects, we have approximately 100 megawatts of projects, all of which are now in the eleventh year and have been operating for at least one or two years. We have been able to, in those two years, run basically in the black, although we've had approximately 30 percent of our projects operating in the red.

And that's not some sort of mysterious movie industry type of in the red, we're talking about cash in has been less than cash going out.

This has reduced our ability to repair turbines. I actually have projects where I've turned down or not authorized a repair for $500 because I cannot expect in the next one or two years that I'll actually recover that $500.

What we see as a potential for Sea West would be either repowering,

our preference would be to repower entirely, but what may actually work out for us would be to repower some of our projects. Keep in mind that all of our projects have their own personalities, their own wind conditions, their own wind resources and whatnot. Some projects may lend themselves to repowering, others may lend themselves to a retrofit.

And we actually have, even prior to knowing about the adder, whether or not the adder might be available, we had been looking at ways in which we might accomplish a retrofit situation.

The problem with retrofitting is that that would essentially have to be self funded. We're not, we're fairly certain that we will not be able to get equity investors and financial institution to invest in old technologies. So it would have to be funded from within. Again, that's where the adder would assist that.

I'm not sure that I have much more to add than what has already been said. Are there any other questions that I can answer?

PRESIDING COMMISSIONER MOORE: No, your dilemma sounds exactly like ours. How to retrofit and make time serious decisions.

[Laughter]

MR. THOMPSON: Well, thank you for the time.

PRESIDING COMMISSIONER MOORE: Bob.

MR. JUDD: Commissioner Moore, recognizing your long experience at the county supervisor's level, I wonder if the remainder of our party could make a request for a zoning variance or a time variance here. If you stick to the schedule you proposed, that would leave each of the remaining parties six minutes to present some very serious information.

PRESIDING COMMISSIONER MOORE: Let's just ask them to condense as much as they can, and we'll rock along, and I'll do the best I can. Again, I don't want to cut anybody off. I just, I want to hear from everybody though.

MR. CARLSON: Hi. I'm Bill Carlson from Wheelabrator Technologies. I'm representing one of the speakers this morning referred to as the "etcetera" portion, which is also known as the biomass part of this coalition.

I represent actually 40 facilities in California utilizing biomass as fuel.

There's 29 of those facilities are operating today. There's 11 of those facilities that are operable but not operating primarily because of the uncertainty that's been thrown in to the mix by, first off, dropping off the cliff, and then secondly by the PUC restructuring process. We will be attempting in our proposal to have all 40 of those facilities hopefully up and operating in 1998.

Those 40 plants that I referred to represent a total investment of two and a half billion dollars. And as Bob indicated earlier about 773 installed megawatts. These facilities use about eight million tons a year of fuel, and therein lies their uniqueness as part of this coalition proposal.

That the cost of the fuel gathering, processing and transportation is what makes this industry unique from the others that are in the coalition proposal. It also is unique in that it also allows it to integrate itself with other pieces of California economy. Namely, the agricultural industry in California, the forest products industry and the solid waste disposal industry within the state, and has become an integral part of the operation of those industries within the state.

It also brings with it, because of that fuel consumption, some measurable externalities that are not like those of the other renewable technologies. Such things as forest fire risk reduction that takes place through the thinnings, air quality benefits that flow out of the consumption of agricultural residues that used to be open field burned, even water shed yield improvement that comes from thinning some of the over stocked forests.

We also, that uniqueness has led the Legislature to also create a parallel path to this proceeding for our industry which is taking place at CAL EPA where they are looking at valuing the benefits that the biomass industry brings to Californians and then looking at strategies to cost shift some of that benefits on to the sectors of the economy that benefit most from that activity and off of the backs of the ratepayers as they historically have been.

And so we have tried to factor in the fact that there are these two parallel paths going on, and our proposal is not done in isolation but is done in recognition that there is this other path under way at this time.

But you must keep in mind that the Legislature recognized this in AB

1890 that the fact that we have built these plants is of no value to Californians. Californians only get a value if we operate these plants.

And so our proposal is designed to incentivize the industry to operate these plants during this transition period, and then secondly we have other mechanisms, including some of the use of these funds, to ensure that we are then at market at the end of this transition period.

So in other words, you only get the benefits if you operate the plants, and that is one of the thesis that runs through our proposal.

Phil, if you put up the first overhead, please.

And so we have two key purposes here that we're going to talk about. One is to maximize the benefits during the transition period, and the second is to indeed bring the industry to market at the end of the transition period.

And there's two sections of AB 1890 that speak directly to this, and these are kind of the guiding principles that we use in putting our proposal together. In other words, they want to support the operations of existing facilities which provide the following as you see. And this family of facilities then totals 40 facilities that carry out these functions within California.

And secondly, and this comes out of the section charging CAL EPA with looking at cost shifting strategies, that they want to retain the benefits while promoting measurable reductions in real costs to ratepayers.

Now we don't believe there's a lot of high science in what the CAL EPA will come up with, and we're going to prejudge what we think they will come up as needing to be addressed in making this industry viable. And this, we believe, will be their key conclusion after they go through their process. That basically, it's the fuel, stupid.

That that's where all the costs lie relative to the biomass industry, and that is where all the cost shifting strategies will be focused, and that is where, also, our proposal is focused is on the fuel side of our equation because that is what makes us unique and that is what contributes to our over market costs of our proposal.

So our allocation then is basically of the 31 percent that we represent in

the industry coalition proposal, we would spend 30 of that 31 percent on a declining production incentive payment to the existing biomass industry during the period 1998 through 2001.

We would spend the other one percent of that total proposal on a research program designed to lower our fuel ash disposal and O&M costs.

Now what that production incentive would look like and the form it would take would be the eligible kilowatt hour fraction are those plants that are off the cliff or who have given up their standard offer contracts. And as you can see these numbers are getting larger as the period goes on as other people drop off the cliff.

The incentive, on the other hand, is dropping over that same period of time for two reasons. One is that if you go to the far right-hand column and look at the costs of the program, that is designed to follow the collection that was mandated by AB 1890. So those numbers fall very closely the percentages that will be collected, and they're slightly back-end loaded as you can see in the fourth year. There's more money collected in the first three, and we've attempted to emulate that collection level.

The second reason that it's dropping is because we expect some short-term benefit out of the CAL EPA cost shifting strategies, but a lot of that will take place, we believe, late in the period, and, in fact, perhaps even beyond the end of the transition period, beyond 2001.

Some details on the production incentive. It's based on kilowatt hours produced, purely and simply to incentivize the industry to produce more kilowatt hours during the transition period. Otherwise to maximize the benefit of the industry to Californians during the period.

It's capped at one and a half cents per kilowatt hour. It's declining to match the expected benefit of the CAL EPA cost shifting strategies. It will be paid out quarterly to certified producers based on their verified kilowatt hours sold during the period.

The reason it's done quarterly is that we want to do a true-up to see if we're still on line with the flow of funds that we anticipate from the collections.

If, for instance, if the number is too low, there may not be enough kilowatt hours generated, and that would allow us to either, for instance, not allow the decline in the production incentive knowing that unless we keep it at a certain level we won't get the kilowatt hours, we won't spend the dollars that were allocated for it.

The reporting will be done to the CEC, and the CEC will approve the funds. As I said, only plants past their cliff date will be eligible for this, or plants that have given up their standard offer contracts.

Any new plants that would come into state would also be eligible for these funds, even though that's a fairly unlikely circumstance as you'll see in a moment from our economics.

We believe this to be somewhat of a self-correcting mechanism, this declining production incentive. That if it's too low, you won't get the kilowatt hours, you won't distribute the funds. It allows you to say that it was not effective, we can raise it in the next quarter, see if we can stimulate the kilowatt hour production, stimulate the benefits.

If, on the other hand, if it's too high, the money went out too fast, you will lower the production incentive and likely lower the kilowatt hours and the outflow of the money in the following quarter. So it has somewhat of a self-correcting feature to it.

We need to talk for a moment about the economics of the industry because we need to demonstrate to you where we are versus where we need to be. Okay.

This would be a typical 1998 cost for a base loaded 20-megawatt biomass plant. The reason we chose 20 megawatts is if you divide our total plants by the number of megawatts on line, that's about the average size of the facilities that have been constructed in California is about 20 megawatts.

As you can see dropping to the bottom line, it's about a seven cent industry right now. You'll see some variation, of course, in that. You may see numbers as low as six cents and numbers as high as seven and a half, but in general. And it's driven primarily because of roughly a two and a half cent average fuel cost

for this theoretical plant that we have here.

Two and a half cents, of course, probably not being, for fuel, not being enough to purchase a $2,000-a-ton old growth redwood to use as fuel, but that's probably another story.

If you jump forward to the revenue line that matches the same year, you see that with an annual estimate of SRAC at only about two and a half cents during this transition period and an average capacity payment of about two and a quarter, this production incentive gets us reasonably close to breaking even for the industry beginning in '98 but not there.

The shortfall, of course, as was indicated by wind and other people, will be taken out of the capital requirements section, which basically says you won't be investing additional capital to lower your O&M costs. You won't be, you probably won't have a big reserve set aside for major maintenance. You may have to restructure your debt. But incrementally, you'll still be there because the lending institution is still better off than if you were to shut down.

Jumping ahead to 2002, we see that we hope to drop this to a five cent industry. Capital requirements remain the same. O&M costs have remained the same, but in actuality those are actual dollars of the year, and so that's an actual decline of about 10 to 15 percent that we estimate operation and maintenance costs over that period. Otherwise that number would be inflated.

And fuel costs we believe can drop as low as about half a cent per kilowatt hour, leaving us as a five cent industry in the year 2002.

Now matching that to revenue, expected revenue in that year, with a market clearing price, and we've looked at some of the studies that have been done, and we believe it will be in the neighborhood of three cents per kilowatt hour when the utilities are getting all their going forward costs out of the pool, and retaining our capacity payments but eliminating the support payment, we're now getting a revenue of about five and a quarter cents or slightly better than break even having a slight profit for this generic plant that we're describing.

Just blow through this part real quickly. But we're also going spend the other one percent of the total fund on a research program. Three components to

that.

There's a model fuel permitting program. Right now you have to invest large dollars to permit any new fuel that might become available to you. It was done on a plant by plant basis. The up-front testing may cost 50 to $150,000 for single fuel, and then have it only permitted at that particular plant.

We want to move all that to the front end based on laboratory analysis of the fuel and relating that to back-end emission numbers.

The ASH Marketing program on the other hand is designed to allow us to create some value for this product, which is currently now used for most part for agricultural, for soil amendment and fertilizing purposes, and in some cases as a construction material; but it's really a cost avoidance strategy where if we do some basic research, we could actually create some value for those products. Because we know that we have it, there just hasn't been the scientific research done to demonstrate that it's as good as 3,000 pounds of fertilizer or per acre or whatever the number may come out.

And then thirdly, we need to do more O&M cost reduction, which plants have not been able to do because many of the facilities are faced, in their lending agreements, faced with what they call a sweet feature. Which if the projections, if the future is not turning out like they projected it to turn out when they borrowed the money, the bank is able to sweep up all excess cash that's available and apply it to an acceleration of the debt. And as they do that, it gives you no incremental capital to invest in operations and maintenance improvements.

And so those have lagged for the industry, and we believe that if we can get together as a coordinated body, there's several key elements that we may want to look into as a research program. Boiler two metallurgy, boiler slagging and fouling that we believe we can solve that on an industry-wide approach.

So just to sum up -- that's it for the slides -- again the intent was to provide maximum output from the industry, and thus maximize the benefits of the industry during the transition period, the declining production incentive and use the cost shifting strategies of the CAL EPA study to shed a substantial fraction of our fuel costs over this transition period.

That coupled with a reasonable market clearing price in the year 2002 will leave this industry at market, leave the plants in tack, leave these 40 facilities still operating to service the needs that California has.

Be glad to answer any questions you have.

MR. HINRICKS: Tom Hinricks, Geothermal Energy Association. Our presentation will be done by Jonathan Weisgall. Jonathan is the Vice President of CalEnergy, the largest geothermal company, and also is now serving as the President of the Geothermal Energy Association. And Karen Edson will assist him. Thank you.

PRESIDING COMMISSIONER MOORE: Jonathan, I've got you down in two cards, two places here. You going to do just one presentation?

MR. WEISGALL: One presentation.

PRESIDING COMMISSIONER MOORE: Thank you.

MR. WEISGALL: One of me, one presentation.

I was going to do the infomercial, but you don't want to hear those, and were there time I'll cut the commercial to ten seconds.

But if you want to go to the first slide, I think discussing the state of the industry today is important for a number of reasons.

Geothermal Electricity represents about six percent of the electricity sold in this state, in California. The annual sales in the United States are about one billion dollars. Some fields have been going for as much as 35 years, the ones in the geysers, and geothermal represents America's second largest grid connected renewable electricity source after hydro power.

I've got the second bullet points there on the worldwide expansion really part of the commercial. The industry has not done much in California over the past five or six years. Given the state of the economy here, the lack of a direction on renewables policy, it has expanded vigorously overseas, signing contracts really in excess of six billion dollars mostly in Indonesia and the Phillippines.

We believe as an industry that AB 1890 does provide some clear guidance for future expansion of this industry, and we see this as a tremendous opportunity for the industry.

You want me to go to the next slide. I think I will skip over. I think we've been through the challenges of AB 1890. The third bullet point is the key here.

There are some you might call conflicting objectives. There's certainly different objectives. One is to maintain existing generation. The other goal is to achieve new market based development.

And an industry, we as an industry would take the allocation that was reached by the larger group that you heard about this morning and allocate 90 percent of the geothermal funds for new development.

To answer or perhaps to guess on a question, there's really not much to put in emerging category for geothermal.

Ninety percent would go to new. Ten percent would go to production incentives along the line of what you've heard from wind and biomass.

In the new development, a couple of key points. The new development would be split between two basic ideas. We had the opportunity to preview those with some Commissioners and Staff yesterday. I want to make one important note from the presentation we made yesterday.

As an industry we realized this morning we don't really have a consensus on how we would split up this new money, but the two basic projects would be a revolving loan fund and a customer rebate program. We believe that both would provide tremendous opportunities for the industry to move forward.

And again, just to put on the table an issue that has come up, especially with you, Commissioner Moore, for new development, I'm not really sure I see any way that you can start allocating dollars until well near the end of the transition period and perhaps well beyond that transition period.

A revolving loan fund for new development, even if there were legislation in late '97, when you look at the siting issues and the EIS issues, we wouldn't be ready. No company could be ready to start construction until '99 or 2000, so you would need the money near the end of that transition period.

For a customer rebate program it just would not make sense if you're building a geothermal plant to look at a four-year customer rebate program. You

would want a long-term contract to support that kind of a program.

The idea behind the revolving loan fund would be to expand, to actually put new megawatts in the ground, or to increase the deliverability of geothermal resources supplying existing facilities. Some of the details you see in our written submission -- I apologize, I'm fighting a terrible cough. Sounds like my voice is quivering, but I'm just trying to keep my voice clear.

We see these as a 20-year interest free loan. However, we have other ideas as well. You could look at low interest loans as a possibility. Because those could be packaged and sold into the secondary financial market. We could also see the idea of loan guarantees, which essentially would permit a developer to get a lower interest rate from a commercial bank having the government guarantee almost like what OPEC does overseas. So there are a number of different characteristics that we could see in this loan fund.

We think it would meet a number of goals of AB 1890. The single most important of which is getting new renewable megawatts in the ground in California. Those facilities would then be competing at market.

Funds would be available for additional investment. In other words, money would be coming back into this revolving loan fund. The ideas you would borrow at either interest free rates or low interest. You would start to pay back in approximately the third year so money would be available for additional projects. You could actually stretch those number of dollars.

And in addition there would be incentives, of course, to continue development, and, lastly, it would be a reasonably simple process.

There probably would be some kind of competitive situation. Our company CalEnergy would come to you or come to the agency overseeing this fund with ideas. Others would come in as well, and there would be a competition to see who could get the biggest bang for the buck in using this development loan fund.

The other concept for new development is a customer rebate program. Customers, as you see, would receive a rebate for a portion of the incremental costs. We would look at long-term contracts here with purchases from certified providers. What does this do? It creates an incentive for green marketing.

In essence, the revolving loan fund addresses the supply side of the future of renewables in California. A customer rebate addresses the demand side simply by building up that customer side.

And we feel that a long-term contract would provide the same kind of a certainty for a developer looking for financing to build a new geothermal plant. To be able to go in and say that a municipality wants to enter a, or you have a contract with a municipality or with a marketer or with some other supplier or with an IOU to pursue a green marketing program, would be a flip side of moving forward with future new development.

Now, again, this would have to spread out beyond that transition period in order to provide some financial certainty, but we think it has a great deal of merit.

As I said earlier, we don't have an exact division to give you today. We really need to talk more as an industry. It could be that it would be 50/50, but clearly a combination of these two ideas of a loan fund and a customer rebate program would be important.

All right, let me slag for Staff, not go into any detail because of time constraints, there are tax implications on the revolving loan fund that get into the investment tax credit and some careful drafting would be required, possibly an IRS ruling, but that's an issue to flag that we can discuss in greater detail at the working session next week.

That takes care of 90 percent of what the geothermal industry proposes. The other 10 percent I don't have to spend too much time on. It would be production incentives. We would want applications in by October 1 of '97. We do feel there should be a needs test. Different companies would come in. There probably would not be enough money if we only allocate 10 percent for production incentives, so it would be necessary for applicants to show the need maximum support of about one cent per kilowatt, and, of course, this would be limited to existing facilities.

We would propose if for some reason monies were not spent, fully spent on this incentive, that the revolving loan fund would get any extra monies.

Those are my key points. I wanted to move as quickly as I could in interest of time and for my voice. Any questions?

COMMISSIONER SHARPLESS: Just one quick clarifying question. Your customer rebate program, is it both for new and existing?

MR. WEISGALL: It would handle existing facilities off the cliff.

COMMISSIONER SHARPLESS: Thank you.

MR. WEISGALL: Or if you had a buy out. Obviously you could then go to rebate program. Out of contract, yeah, if you were out of your SO4 contract. It would affect existing facilities and would definitely be part of a package for new.

I wouldn't want to necessarily, you may want to mix and match, you may want to go all revolving loan fund for a particular project. I think it would depend largely on the project, the size of that project, and the real marketing approach of the developer.

I think some in the industry really see green marketing as the future. Others are a bit more skeptical and really see the goal here of getting, of being able to get the financing and can see a tremendous advantage to getting the cost of capital down and getting it down up front and early and with certainty.

PRESIDING COMMISSIONER MOORE: Thank you.

MR. WEISGALL: Thank you.

MR. WILLS: Good afternoon. According to my calculations, I'm about two minutes late. But my name is Eric Wills. I'm speaking today on behalf of Solar Thermal Electric Alliance, which are the SEG facilities.

Typical of fashion, we were the last to join this coalition, and we're the last to present, and we'll make our comments brief here.

MR. MASRI: But they'll be good.

MR. WILLS: They will be good.

Solar Thermal Electric Alliance is 354 megawatts, $1.5 billion in capital costs, approximately 250 employees, and we produce 90 percent of the world's solar thermal electric power. We have 100 percent on-peak capacity factor, and 80 percent of our generation is produced during on- and mid-peak periods, and our technology has low fuel costs, obviously through the sun. We have high capital costs and high

operations and maintenance costs.

As I'm sure you know, Article 7, Section 383A-3, states monies collected are to be held for purposes of supporting the operations of existing innovative solar thermal technologies that provide essential peak generation and related reliability benefits. We are the SEGS facilities that they are talking about.

And also before I go much further, I think it's important because we're under such time constraints here, our detail proposal is involved in the overall proposal. I see you guys kind of scrounging around a little bit. If you look at what you got faxed from Nancy Rader yesterday, our proposal starts on page 11, and the detailed proposals in there. Wind is further on in there, and you will have attachments for biomass and geothermal. Okay.

We are talking about in our proposal 10 percent. So under the industry-wide consensus, 10 percent of the funds would be allocated to the existing SEGS facilities. Which is under our allocation $54 million.

We believe the most efficient use of the funds would be focusing on those things that improve performance, increase reliability, upgrading control systems. A lot of our solar facilities are automated controls, they track the sun automatically, and that technology, frankly, was done before Intel produced a very good microprocessor. So there's a lot of things we can do there.

We do see maintenance costs increasing efficiency and lifetime of the solar field components. As I'm sure you all know, Luz, which was the original developer, went bankrupt back in '91, and so there's a lot of additional work that now the owners of these facilities have to do that they never anticipated doing. They always felt that the existing contracts would hold up with the developer, and since that has not happened we've had to gain a lot of technical expertise that, frankly, we didn't have to do in the beginning.

And so we believe that we are capable of determining that. We've been fighting with it now for five years. We believe that the true part of making this cost competitive is the lack of funds to implement what we know needs to be done. It's not like we have to invent anything else. We know what needs to happen here.

We also believe, although we're allocating all of our monies to the

existing facilities, anything we do spend on the existing facilities will be applicable to other solar thermal technologies and any new SEGS development.

Okay. What we have done here is our proposal is combined in with this other one, so what we have done here is we have answered specific questions that are unique to the solar thermal industry. Just like you've seen on some of these various areas.

So what we have done here is gone through your list of questions, and they are numbered so you can track through them. And the first question we have is: How does your proposal allocate? And basically we allocate 10 percent or $54 million to the existing SEGS.

And are the allocations fixed now or made to --? They're fixed now. And again you've heard the certainty argument, I don't think I need to go through it, but it's important that we have certainty.

What's a little bit different in our proposal is that we don't think basing it on total kilowatt hours produced is the right way for our industry. And the reason why we don't think that's the case is we may have a scenario where we take a plant out of service for six months, and that may involve a significant repowering.

It's not like the wind where they might have their wind turbine off the shelf, or they climb up that pole. I'm over simplifying, but they can get that thing operational pretty quickly.

We do a big repower. It could be out for two, three, four, five months, and we think if we just base it on production credits that that would deincentivize the facilities owners from doing the most economical use of those funds.

Another question which is question seven: What entities would be responsible for evaluating the projects? Obviously we think the CEC or your designee, however that would happen, would be fine.

We think that the Solar Thermal Energy Alliance, which is all the nine SEGS facilities, are the most appropriate people to determine how the money is spent within our industry and within our facilities. We have the incentive to spend those monies wisely.

I can tell you that most of our funds will be spent on capital

improvement and reducing O&M costs. It's not that complicated. We want to increase our revenues. We want to decrease our costs. And so the way to do that is to invest right back in the facilities.

I can also tell you that in our proposal we'd be willing to provide you the actual invoices and payments of where we spent that money. So there is a check and balance there that that money's not going to some weird esoteric thing. It's going to go to actually buy mirrors, heat collection tubes, sun sensors, you know, turbine efficiencies, steam generating trains, things like that.

Like the wind area, this is question eight that I'm on: How are the funds be awarded? Again, we wanted it monthly, and we also want certainty. And that would allow us to enter into some of these long-term projects to get these plants up to speed.

I can skip through 10 there. I'm on 13 now. How does your proposal maximize the effectiveness of the funds?

Again, we believe that within the industry, and I'm going to have Mr. Scott Frier who is doing my slides for me, he is the General Manager of Kramer Junction Company, Kramer Junction Operating Company, that operates SEGS III through VII, my company operates SEGS I and II, talk about some of these items where we would spend this money.

But again, we believe that through the operations of maintenance be sufficient, and also we would put a cap on any type of debt restructuring.

One of the concerns that people have had is what you could do is take this money and just give it to the debt, and the plants may still fail. So you might solve your debt issues, but what happens to the plant. What we have done in ours is limit that amount of money to 25 percent. So 75 percent of the money would have to go directly back into these facilities to reduce their costs.

Okay. With that, I'll bring up Mr. Frier to talk briefly about types of O&M issues. And we realize this is very small, but you should have a handout.

MR. FRIER: Again I'm Scott Frier, General Manager of the Kramer facility. With the depth and grace that I handled the slides, it's kind of scary that I operate a power plant, I realize.

However, I have for the last year, five years rather, presided over a project. It's called a SANDEA [phonetic] Nation Laboratory Sponsored Cost Reduction Study, and it is funded by the Department of Energy. And for five years we have evaluated exactly the issue of cost reduction, O&M cost reduction and solar thermal facilities.

So for five years we have gone through a series of research and development projects and come up with definitive conclusions on how we can reduce the costs.

Now being responsible for that project is kind of like being a chef in a fine restaurant for five years coming up with titillating entrees but not being able to afford to eat them. So now that I was given the opportunity to make a proposal on what we could do with some monies to truly make the plans viable, that's precisely what we've been studying for five years.

So I was very excited about putting that list together, and that's kind of what I've done on this very tiny overhead, and you've got it in front of you.

For the most part we concentrated on the largest cost contributors, and those are the unique solar field components. And you see the three listed on the top. And they are the interconnection between the collection devices, the heat collection element itself and the mirror facet. And through the research and development efforts we have come up with newer, stronger, cheaper components to replace all of the three existing components that we believe will substantially reduce the major cost contributor to the SEGS.

There's a numerous amount of other ancillary projects that we have proposed. Each SEGS is a little bit different. Insofar as it was a research and development project, we have been able to, in many cases, prove out exactly what the outcome will be if we affected changes.

On others within the Kramer facility, however, we were allowed to go up to in certain cases pilot projects. But since we have five plants, if we had a really spiffy idea, we were allowed only to apply it to one plant because that's all that was necessary to prove out the effectiveness of the research and development project.

So in some cases we have gone through and we have done this at one

or sometimes two of the Kramer SEGS, and that's to compare the outcome on two different plants. But to date the Daggett facility and the Harper facility has not had the opportunity to have any of the projects, and they're, I'm sure, very anxious to make use of the lessons learned over the course of the last five years.

So really my charter today was very narrow, and that was just to empty the sand out of my shoes and come up from the plant and kind of give you a little testimony on what I have done for the last five years and why it makes sense and why that we believe this strategy for investment does not constitute a risk.

PRESIDING COMMISSIONER MOORE: Thank you, sir. That's everybody I have on the list of the card that you had for us.

Jan, do you have collective questions that you want to put back out?

COMMISSIONER SHARPLESS: I'm still a little confused about emerging. Who is emerging again?

MR. WILLS: Emerging is not part of a detail proposal here. As you saw in the slide that Bob Judd put up twice here, there's eight percent allocated in our proposal to emerging. Emerging, I assume, is one of those other two people that are going to come up here, which is mostly PV.

COMMISSIONER SHARPLESS: But they're not within the coalition proposal, but they've got a number in the coalition proposal.

MR. WILLS: We have allocated funds to them but not address their proposal.

COMMISSIONER SHARPLESS: Because the number and the proposal don't match.

MR. WILLS: That's safe to say, yes. There are four solar technologies. PV, dish.

COMMISSIONER SHARPLESS: They got one foot in and one foot out.

MR. WILLS: There's four solar technologies that you're hearing about.

PRESIDING COMMISSIONER MOORE: Members of the club, but it may not be your club?

MR. WILLS: I can tell you in our proposal that SEIA does support our solar thermal existing proposal in our allocation.

PRESIDING COMMISSIONER MOORE: Well, I have a card from Les Nelson with a lot of names on the back, and I'm assuming that that's a good segue, no pun intended, as to the solar presentation.

All right. Les Nelson. And I'm assuming that where Bob has left a space in their allocation, that your discussion, your collective discussion is going to link back to that so we understand either the discussions that you had with them, the differences of opinion, or the concurrence of opinion about there ought to be a number but it ought not to be that number, that kind of thing. Am I understanding it right?

MR. NELSON: Yes. My name is Les Nelson with the California Solar Energy Industries Association. That is certainly a topic I hope to flesh out to a certain extent here this afternoon.

First let me, by way of introduction, say that we submitted a proposal to the Commissioner's Office last evening which I hope you all received. It's actually what we're terming an umbrella proposal, and it specifically addresses the emerging renewable technologies allocation of AB 1890 funds.

I call it an umbrella proposal because it really consists of two separate proposals. One of which developed by the photovoltaics industry in California in conjunction with a California PV for U collaborative for which the CEC is a participant, in fact the facilitator.

And the second proposal is actually a document that was prepared by the Solar Energy Industries Association and with the assistance of the California Solar Energy Industries Association, and it concerns central station larger scale technologies such as the power tower and the dish sterling solar technologies.

Let me indicate that the Solar Energy Industries Association is a trade association based in Washington D.C. with approximately 500 member companies around the country, including 90 members of CAL SEIA, which is the California Chapter of SEIA here in California.

Our basic direction and thrust, as I mentioned earlier, is in the allocation of emerging renewable technology funds under the auspices of AB 1890. Obviously AB 1890, as we've said on our slide here, has changed the electricity

market. We believe that all the providers must adapt to competitive markets and that subsidies buy time but do not buy solutions.

And as such I think you'll see that the proposals contained in this umbrella proposal really target getting these technologies to a market point at the end of the term or very close thereto, and as well I think you'll see that they are customer based largely incentives that serve to, particularly in the case of PV, that serve to involve end users in the purchase and use of these technologies. And we think that's unique. We've identified a very clear route, I believe, to that end objective.

Next slide.

The proposal that we put in front of you today recommends allocating no less than 25 percent of the available AB 1890 funds for emerging technologies. This is obviously much different than eight percent, and I'd like you to know that our industry did participate in early negotiations with the other major proposal group in an attempt to come to an equitable arrangement of funding. And, unfortunately, we were unable to achieve a level that was anywhere near what we felt was adequate for the objectives that we've identified and the paths that we've laid out to bringing these technologies to market price at the end of four years.

Therefore, while the allocation that you've seen earlier today calls for eight percent for emerging technologies, we believe that that is inadequate, and that's why we are not standing at the same table with the other proposers. And what we hope to demonstrate to you today is why we believe it's inadequate and why we believe the 25 percent number is more appropriate to our objectives.

It's a $90 million difference. We believe the CEC needs to strike an appropriate balance between investment in the new and emerging technologies that will make up California's energy future and the subsidization of existing technologies.

What you get for the $90 million, emerging technologies represent a sustainable clean energy production in the projects, and the programs that we are proposing are market based programs. And we fully expect that the component of the programs which leads to customer ownership and use of these technologies,

particularly again on the PV side, represents a unique method for achieving the goals of AB 1890.

Other topics which we believe absolutely have to be considered when looking at emerging technologies is the fact that these technologies both attract outside investment in the form of companies relocating to this state to manufacture these technologies as well as many of these capture significant federal funding dollars that in some cases are dependent upon other sources or matching funds for their targeting specific technologies.

So outside investment we feel is a key consideration. Also, these technologies create jobs and have excellent export potential.

The existing technologies, the funds buy some additional generation, some health for a period of time for these companies, but it's not clear, I should say these technologies, it's not clear in some cases at least that the investment of these funds will lead to a long-term health of those technologies.

That having been said, the key points that I would just like to shortly summarize before I turn over the microphone to some of these technologies that we are representing here today is that we feel that a minimum of 25 percent of the available renewable funds should be targeted to emerging technologies.

In answer to a question that was proposed by Commissioner Moore last week, we believe that these programs, emerging technology programs, are most appropriately funded through the use of renewable monies as opposed to hoping that allocations from other pots of money, such as the efficiency funds, would be allocated for these purposes.

There are no assurances or no indication that such an allocation would occur anywhere in AB 1890, yet AB 1890 specifically makes recommendations for allocation of renewable funds to emerging technologies.

Another point we feel strongly about is that separate programs, and you'll hear more about them, are required for large scale central station and small scale distributed emerging technologies.

Further we feel that the Commission should consider the arguments in favor of eliminating the requirement for no more than 25 percent fossil fuel use

in hybrid renewable plants. Without reiterating that point, we feel there are some excellent economic arguments for that. It's unclear if the Commission can actually accomplish this objective, but we'd very much support such an effort.

Again, the Commission should consider the non-energy attributes of solar technologies. Jobs, export and outside investment.

And finally I will say that the Solar Energy Industries Association and CAL SEIA do support the support of the SEGS facilities through the existing renewables funds identified in AB 1890.

With that, I'd like to turn the microphone over initially to Howard Wenger with the Pacific Energy Group. The documentation that you received last night is complete with the absence of documents from two proposers who are prepared to submit those to you at the time they speak this afternoon. Mr. Wenger's proposal is contained in its entirety in the document that you received last night, and it regards the photovoltaic technology.

PRESIDING COMMISSIONER MOORE: Mr. Wenger, welcome.

MR. WENGER: Thank you. My name is Howard Wenger. I'm with Pacific Energy Group.

I'm here actually representing four organizations that are submitting a proposal that is in front of you for emerging renewable photovoltaic technology. They are the California Photovoltaics for Utilities Collaborative, California Solar Energy Industries Association, The Solar Energy Industries Association and the Sacramento Municipal Utility District. SMUD has joined our proposal, and they are here today to tell you a little bit why.

What I'd like to suggest is that I, as quickly as possible, go through the specific details of the photovoltaics proposal, and I'd like to turn the microphone over to a few people from industry and SMUD for very brief comments.

We really appreciate last week having the opportunity to tell you about the photovoltaics industry. I'm not going to do that again today. But the point that I wanted to make was that there is a very robust industry that's in place. The point is that this industry is driven by the off-grid market, not the grid connected market. So this is an area where photovoltaics makes more sense than extending the electric

distribution grid.

And 70 percent of the industries' $1.3 billion per year actually goes international, to the international market. Places like India, Asia, Latin America, where it makes more sense to power a village with photovoltaics than extending the grid.

So we do have a very sophisticated network of manufacturing and distribution capability, but it's, again, oriented around the off grid market. We use the same products that we would use on the grid connected market.

In fact, there is something like 500 grid connected photovoltaic systems in California today. These are not cost effective, but they were put in place because either the people were early adopters or green and willing to pay the price for that, or they were part of an aggressive utility program like SMUD where they're on a path of sustained orderly development.

Next slide.

So I do want to say that PV is an emerging technology on the grid, and it's more of an emerging application. The technology's ready, it's the application on the grid that isn't there yet. And so the ultimate objective is to transition PV from the off-grid market to the on-grid market as a new energy source for Californians.

Next slide.

This is actually a chart that I showed last week, but I redid it in terms of cents per kilowatt hour. And what it shows, Jim, could you just put it on, elevate it a little bit, it shows in real 1996 dollars the price of PV electricity generation.

So in 1984 it was about 55 cents per kilowatt hour. In today's facilities that are going in, it's around 18 cents per kilowatt hour on a levelized basis. So it's about a third of what it was 12 years ago. And that's a dramatic decrease.

And it's wonderful to see this kind of very classic technology development curve that we've seen the auto industry and the computer industry, but clearly at 18 cents per kilowatt hour we're not competitive even at the retail end on the grid.

So if you follow that projected cost trajectory, which is at a nine percent per year decline, that's the dotted line, you see that in about the year 2004, 2005, we're

entering on a business-as-usual basis. We're entering a cost effective regime on the electricity grid.

But that means we have to wait eight years for PV to happen on the grid. So what we're proposing is very market oriented market base program with two key components to get us to cost effectiveness on the grid in 1998, and then transition us to be cost competitive on the grid without any more subsidy in the year 2003.

Those two elements are consumer rebates, and they're going to go directly to consumers to purchase PV. And the target is residential consumers and small businesses in conjunction with low interest, low cost financing.

When you combine these two elements what you have is we're trying to achieve a target market price of $3 per watt installed. Right now we're at about $6 per watt. So we have to cut the price in half.

So with a rebate we can approach this target market price, and in conjunction with a low interest financing, say at five percent interest rate, we can achieve a levelized cost of electricity of just over eight cents a kilowatt hour. We think that that's a very compelling argument for consumers to invest in this technology.

And so the program is really a cohesive program with about four elements to it. The Greenback, what we're calling the Greenback Program, which is direct consumer rebates, cash rebates, that will be available on declining basis to exert downward pressure on price, a low interest financing program, and then we're recommending that a consumer quality assurance program and a green marketing program also be funded under the emerging funds.

And what we're looking for, or what we suggest that is needed to make this transition happen, is $96 million for the photovoltaic program.

I just want to talk briefly about each of these elements of the program and give you the details of what we're recommending the Commission to consider.

The Greenback Program --

COMMISSIONER SHARPLESS: Mr. Wenger?

MR. WENGER: Yes.

COMMISSIONER SHARPLESS: This sounds awfully familiar from what was presented last week.

MR. WENGER: Yes.

COMMISSIONER SHARPLESS: And am I missing something here? Is there new information?

MR. WENGER: Yes, there is.

COMMISSIONER SHARPLESS: Okay. Are we there yet?

MR. WENGER: We're just about there.

COMMISSIONER SHARPLESS: Okay. I'll be patient.

MR. WENGER: Thank you. Thank you very much.

COMMISSIONER SHARPLESS: I just want you to know I'd been listening on the 19th if this is a test to see if my recall?

MR. WENGER: This is not a test. It's my own problem. I have a tendency to hammer points home until the wood splinters, and that's my own -- It's close. Let's move on to the next slide, please.

[Laughter]

MR. WENGER: What I'm recommending, or what we are recommending, of this $96 million allocation, that $66 million be made available in consumer rebates for a 50-megawatt program.

This would be extended over a six-year period. We think six years are necessary and needed to make the transition happen, to make a smooth transition happen and not just allocate the money over the four-year period. It would be collected over four years, but it would be distributed over six.

The second column from the right is the consumer rebate. And you can see that it initially starts out at $3 per watt and then declines each, at each different level to $2.50 to $1.50 and $1.00. In effect we're weaning the industry away from these rebates and exerting downward pressure on the price so that we're competitive at the end of the period.

What we're suggesting is that at each rebate level you set a maximum amount of megawatts that are eligible for that rebate. So in the first year three megawatts on a first come first serve basis to the consumer, you can get the $3 per

watt rebate.

In other words, if I'm a residential customer and I want to buy a one-kilowatt photovoltaic system for my roof, and that one kilowatt system by the way will reduce my energy bill by about 25 percent, at today's market prices and volume that would be about $6,000. With a rebate of $3 per watt, the price would be $3,000 for that PV system. In conjunction we would offer low interest financing to finance that system. So, in essence, we'd have a very short pay back with that customer. Probably less than five years, depending on the price of electricity.

Those $66 million we're estimating would provide the capital and infusion in market incentives needed to create something on the order of 20,000 customer owned systems in California.

Next slide.

COMMISSIONER SHARPLESS: Excuse me. How many customers in the first year, three megawatts, would that serve?

MR. WENGER: Something like 1200, 1200 systems.

COMMISSIONER SHARPLESS: Oh, I see.

MR. WENGER: And that's based on an estimate of about 80 percent of those systems would be for residential customers, and then 20 percent for commercial customers.

So we're talking about systems on the order of two to three kilowatts for residential customer, maybe 25 to 100 kilowatts for a commercial customer. That's the rating of each PV system.

The second element is the low cost loan program. Next slide. We're looking at two basic approaches to that. What we're looking for there and recommending is that $24 million of the 96 be used for low interest financing.

There's two approaches that we're going to be investigating or that we suggest be used. One is to create an infrastructure, a lending infrastructure that's going to be in place after the AB 1890 money is gone. So we'd suggest is money be used to buy down principal, buy down interest rate and buy down risk premium of existing lenders and piggyback on programs that are out there right now. Such as the Edison Electric Institute has a program, Fanny Mae, etcetera.

Next slide.

This is a repetitive slide, and again a revolving loan fund concept. Thank you.

And finally consumer quality assurance green marketing and a solar fund to act as the umbrella organization. We envision that to be a public/private entity to administer the program.

Next slide.

This is the bottom line allocation as we have submitted in front of you. Again, $96 million, 66 million for rebates, 24 for low cost interest, low cost financing program, 6 million for the green marketing consumer quality assurance and overhead of the program.

That should just about do it. I'd like to just say that we feel that this program at this funding level is needed to achieve the critical mass that we need to actually achieve a market transformation. This market doesn't exist today. So what we're trying to do is stimulate the market in a way that it will exist.

And we had a meeting yesterday, the California Photovoltaics for Utilities meeting, and somebody made the analogy it's like we're trying to get this boulder up a hill and over the other side. We feel that we need to have this program funded at this level to get the boulder up and over the other side. Otherwise it will just come back down crashing on top of us and actually do more damage than good.

Thank you very much for hearing us out on our recommendations. We're happy to answer any questions that you have.

COMMISSIONER SHARPLESS: Well, it seemed to me also last week that there was some talk about how this is a national program. You know, that this is not a concept unique to California. That there are a number of areas where such a market could be supported.

MR. WENGER: Yes.

COMMISSIONER SHARPLESS: Are they asking for similar funding levels in those areas? Are they state funded? Are they ratepayer funded? Are they federal funds?

MR. WENGER: Yes, I can answer that question.

COMMISSIONER SHARPLESS: Is there any synergy and critical mass?

MR. WENGER: Yes, there very much is. We have really learned a lot from activities actually abroad rather than, this would be the most ambitious program in the states.

Abroad in Japan and Germany, there is some very ambitious programs. In Japan they've actually taken this same approach where they --

COMMISSIONER SHARPLESS: Actually you covered that.

MR. WENGER: Yes. And so but the point is that they are making that same level investment to achieve the critical mass that's needed. So this is not based on numbers that we're just pulling out of the air. We're very much following other activities.

COMMISSIONER SHARPLESS: Now, what I was actually getting at, but I think that's an important point that you make, is are there other funds available for this program? We obviously don't add up to 100 percent here.

MR. WENGER: No.

COMMISSIONER SHARPLESS: If we were to look at accepting the programs that have been presented here today, we're over the 100 percent mark.

MR. WENGER: Yes.

COMMISSIONER SHARPLESS: Are there, and you've raised concerns that you do not believe, perhaps it wasn't you, but I think it was, use of money from the energy efficiency
surcharge --

MR. WENGER: Right.

COMMISSIONER SHARPLESS: -- was not something that you feel necessarily that you can count on.

MR. WENGER: Yes.

COMMISSIONER SHARPLESS: So are there any other sources of funding other than the 1890 fund?

MR. BUTLER: Barry Butler from SAIC. From previous testimony we have provided this, which is the cost share from the federal funding. So that's the

federal funding profile, and that's in our first testimony.

MR. WENGER: That's not nothing to do with this. I think what I'd like to do is allow a couple of other people to respond to that question. If you have other questions for me, I would love to respond to those.

PRESIDING COMMISSIONER MOORE: No. Thank you.

MR. WENGER: Thank you.

PRESIDING COMMISSIONER MOORE: I have Jim Trotter down.

MR. TROTTER: I'm Jim Trotter, President of CAL SEIA. I'm also Marketing Executive in Solar Electric Specialties, one of the little companies you saw on that map of photovoltaics in California.

I'd like to point out that CAL SEIA represents over a hundred companies in California, and probably 85 percent of those companies would benefit from a program that was as described by Howard in his presentation.

One of the key things to remember is something that I believe John White said this morning that there's renewables and there's renewables and there's different ways of looking at them for different purposes, and photovoltaics is one of those unique beasts. It does a lot of things for a lot of different people in a lot of different ways.

It is such a revolutionary technology that it does change the terms of debate, and we're trying to ask you to have an understanding of the nature of that technology.

This is a technology that the ratepayers can fund and the ratepayers individually can directly benefit from by the program we describe where there'd be 20,000 different systems sited throughout California at the end of this program.

So I feel that it really does fit in very well with AB 1890 and the wider intent of public policy in California in general.

Thank you very much.

PRESIDING COMMISSIONER MOORE: Thank you. Okay, then I've got Dale Rogers, is that correct?

COMMISSIONER SHARPLESS: Are there some other?

PRESIDING COMMISSIONER MOORE: Sorry, I'm just going on the

list order that you provided me earlier. If you've got a different order, I'm okay with it.

MR. WENGER: Yes. Okay. Thank you.

MR. NELSON: Les Nelson. What I neglected to mention is that we have two of the larger manufacturers actually in the world today of photovoltaics. We'd like to say just something briefly on PV as well as Don Osborn would like to say a word in regards to SMUD. And we'll move on to the other technologies. Dale Rogers with the central station, and the dish sterling technology with Barry Butler.

We will try to keep this short.

PRESIDING COMMISSIONER MOORE: I'm happy to hear from you, but as I said before this is, we're just about done with the commercials, so.

MR. NELSON: Understood. The next person will answer Ms. Sharpless' question. Thank you.

MR. YENAMANDRA: I did have a prepared presentation. I'm Faju Yenamandra of the Siemens Solar. We are the largest manufacturer in the world of photovoltaics with 25 percent market share.

And directly to answer your question, there is no other source of funds that we have. And as a reference point, Howard talked about the Japanese PV program, and that is about $100 million just in 1997 and increasing every year for the next five years. That's the plan that they have.

And so we have a preeminent position in the marketplace today, and we may not have that because of the economics of volume that we are faced with. And these manufacturers in Japan are gearing up to work this particular program, and they're also getting very aggressive in marketing in the United States.

And we have a lot of off grid applications that are cost effective today. Our market is based on that our business is based on that. And we've been growing at the rate of 10 to 15 percent per year. But we're also seeing as the costs come down we have new emerging applications coming on line. And the largest one that we see is utility grid connected one.

And, no, there's no program at the national level. There's no program at any other state level that we can access here.

So the only program that we see is here in California combined with the cost effective application and the growth that we see internationally that 70 percent of our product going overseas along with this particular program we might have the critical mass to reach not only a cost effective application in grid connected applications here, but also to be the world leader in photovoltaics and maintain our position in the world as well as in California.

And we are based in Camarillo, California. We invest approximately $50 million a year here, and they invest in R&D monies in California. We have manufacturing here. We've been here for 20 years. And I'd like to see this industry sustain and grow.

Thank you very much.

PRESIDING COMMISSIONER MOORE: Before you leave, just a question I know I was asking in my notes here earlier. What's a typical industry ROI for photovoltaics?

MR. YENAMANDRA: Right now the owner investment is not even in the positive at this point because our mass is not critical mass. It's not been reached. And we have been growing from a very small base, and so our dollar investment is really on the negative, not on the positive, but we are in the break even point, we believe, by end of 1997, independent of any other programs that we have.

But we continue to invest companies as large as Siemens continue to invest because we see this as the new and upcoming technology for the next century. If that is the case, we are willing to invest in that fund. We are not asking for money as hand out. Okay, here is the return investment on what we're doing.

What we're asking for is a stimulus to the market. That is the basis on which I can go back to my shareholders and say I need another 10, 20, $30 million to invest in additional manufacturing capacity and additional charge.

PRESIDING COMMISSIONER MOORE: So Siemens has viewed this in the past, if I took a window of five years or eight years, they've used it as a loss leader?

MR. YENAMANDRA: Yes, it is. And I think it's and they are willing

to invest for the next five to ten years in this one as long as we stay on the track of breaking even by next year, which is what we have in our plans and they're very close to that one.

Thank you.

PRESIDING COMMISSIONER MOORE: Thank you.

One other industry representative? I'm sorry, two? Excuse me.

MR. SOWTER: Good afternoon. I'm Richard Sowter of BP Solar as you'll remember from last week. So I won't go over the same points.

Just to I would like to reenforce some of the points about our in particular technology. PV is the only renewable electricity generator that can be deployed in the urban environment at the point of demand.

We favored market base mechanisms where the end user or the consumer can benefit directly. All Californians will have the opportunity to take advantage of AB 1890 as individuals in our proposal. PV can be simply and quickly deployed.

If the AB 1890 funds can provide the critical mass to kick start the market and stimulate the market, we, as an industry, will make the investment in the manufacturing and the marketing. That's a sustainable market.

Thank you.

PRESIDING COMMISSIONER MOORE: Thank you.

MR. OSBORN: Good afternoon. I'm Don Osborn from Sacramento Municipal Utility District, and I, too, will try to endeavor to keep these short.

We support this proposal for a number of reasons. First off, we see a critical need to use these AB 1890 funds to complete and encourage the commercialization cost reduction of these technologies to position the California renewable market to be self sustaining at the end of this period.

We should not focus just on the short-term subsidies of existing above market technologies or new ones that don't show a clear path to sustainable commercialization. The triage model that you mentioned earlier seems particularly appropriate in this case.

The funds are indeed insufficient to fill all these needs. I might

mention to Commissioner Sharpless' question earlier that this program is predicated upon the existing technology RD&D funding through the federal program and others, but those programs don't go into this market conditioning and commercialization effort.

We must utilize the funds which are limited to the best effect and balance manner. And so we recommend that an effective balance that's consistent with the intent of AB 1890 is as follows:

Emerging, 25 to 30 percent; new, 25 to 30 percent; existing, 40 to 50 percent.

At SMUD we're involved in nearly all of these renewable technologies that you've heard and have come to this conclusion from a very broad perspective. Proposals to allocate less than 25 percent to the emerging category we would consider as not being responsive to the mandate of the emerging renewable section of AB 1890.

And that is to utilize a significant portion of the overall funds to affect market transformation and technology commercialization needed to continue California's tradition of renewable resource utilization, to increase our resource diversity and position us to benefit from the economic development potential.

Skip over some of this for you.

It must be recognized, however, that the emerging technology category that's been established represents our investment in the energy future, rather simply a subsidy of the past and the existing. And it's looking at this as an investment I think is a very key point.

One of the profound differences in the proposal before you now is the fact that these distributed technologies are capable of competing at the retail marketplace and are not limited to the much more stringent economic requirements of the wholesale bulk market.

And it's been our experience at SMUD that we see a low risk pathway to commercial success for this customer sited PV at the retail level, and that's an explosive market somewhere around the $3 per watt level.

We believe that this proposal successfully answers the questions of an

accelerated commercialization plan that will lead to a successful conclusion.

The 50 megawatts of PV capacity specified in this proposal isn't pulled out of the air but is carefully selected as the critical mass required to stimulate this emerging PV market and new PV production necessary to reduce costs, to result in a viable self sustaining PV market.

It's important to allocate these funds from the emerging renewable pot as there's a great deal of doubt whether there's any significant portion of the funds from energy efficiency or RD&D that would be applicable or indeed allocated to this approach.

SMUD has extensive experience in the development, implementation and the commercialization of renewable energy technologies. We have participated in these discussions and consensus building with industry that's resulted in this proposal that's being presented to you.

The SMUD staff endorse and supports this proposal as one that makes the most effective use of an appropriate portion of the funds allocated under 1890 to complete this commercialization, this market transformation and brings PV in particular, solar in general, to a point of being a viable self sustaining and important contributor to California's economy.

PRESIDING COMMISSIONER MOORE: Let me ask a question. I, of course, haven't been sitting in on the RD&D Committee hearings, but assuming you know that I don't know it seems to me if I look backwards we've made a very significant contribution toward PV out of the RD&D funds.

MR. OSBORN: That's very true.

PRESIDING COMMISSIONER MOORE: Are you telling me that that's likely to curtail to zero?

MR. OSBORN: No. As a matter of fact, I think that those investments in RD&D will continue and will be an important part of the success of this plan. This portion of the plan focuses, however, on market transformation and commercialization. A portion, a critical portion of success, that isn't addressed in the RD&D area.

PRESIDING COMMISSIONER MOORE: I must have sure been

missing the Staff memos when they came by because I understood that that was part of the justification for the somewhat lavish support that we've given to that in the past. And I'm not coming to your point here. You seem to suggest that if we don't support it here, it's not going to get support?

MR. OSBORN: No. As a matter of fact what this project, what this proposal does is accelerates the commercialization of PV so that it becomes a viable contributor in this time frame.

PV is on a track to be in long term a successful competitor in these markets. But that may well be 10, 15 years later than what this proposal would allow it to become.

PRESIDING COMMISSIONER MOORE: Okay.

Jan.

COMMISSIONER SHARPLESS: No. I'm fine, thanks.

PRESIDING COMMISSIONER MOORE: Okay. I guess we go back to your list then. Mr. Nelson. Okay. Pardon me if I just didn't check. Jim Trotter, did you speak to us?

MR. TROTTER: I did.

PRESIDING COMMISSIONER MOORE: Okay. I apologize. Dale Rogers?

MR. ROGERS: Good afternoon. Dale Rogers. I'm representing Rockwell International's Rocketdyne Division located in Canoga Park, California.

I, too, have been slashing away at my notes and hopefully I can be brief. Pardon me if it's a little disjointed.

PRESIDING COMMISSIONER MOORE: Well, don't cut any facts out. That was not my point. We want you to have all the time you need.

MR. ROGERS: Okay. Well, the primary intent is I'm here today primarily to talk about solar sensor receivers for the power tower technology. And if nothing else I'd like to accomplish two objectives, and that's to make two points very clear.

First of all, we're one of three solar thermal technologies, and we are not aligned with the earlier coalition that you heard this morning prior to lunch

and just after lunch. We are aligned with the SEIA position. Just want to make sure that was clearly understood.

We'd also like to convince you today that we consider ourselves an emerging technology. We feel that we're technically ready. We feel that there's significant commercial opportunities out there for us, and we feel that we're ready for near term commercial deployment.

So with that, I think in the interest of time, I've pulled a few slides out of your packet, but I will try to touch on some of the key points that I'd like to made.

I'd like to start by talking a little bit about some of the unique characteristics of the solar thermal power towers or sensor receiver technology and the status of some of the activities that we have ongoing at Solar II, the project that we had located just outside Barstow, California.

A particularly attractive feature of the Solar II plant design is the fact that we utilized the molten salt technology. More specifically, two of the key advantages of the molten salt are, one, its ability to operate in high temperatures which in turn leads to higher efficiency plant operations, and, two, its thermal storage capability which allows for the coverage of California summer evening peak loads.

COMMISSIONER SHARPLESS: I hate to do this again, but this sounds very similar to a presentation we had last week.

MR. ROGERS: Well, let me just say that we've had an individual from Rockwell speak briefly in earlier sessions.

COMMISSIONER SHARPLESS: Right.

MR. ROGERS: And we've had an individual speak briefly from Bechtel in earlier sessions on this technology. What I wanted to focus on today was to show a few of the slides and more specifics about what we're doing at Solar II to convince you that we're beyond the RD&D stage and that we are indeed an emerging technology.

COMMISSIONER SHARPLESS: Okay.

MR. ROGERS: Also, this technology offers numerous potential applications, including plants that can range in size from 30 megawatts up to 200

megawatts electric, and they can be configured as either solar only or hybrid plant configurations.

This is just simply a one-line schematic showing what a typical commercial solar-only concept would look like, and this is typical of the design that we have down at Solar II outside Barstow.

Of particular interest here, without dwelling on the details, let me just point out the hot salt thermal storage tank. This is a particular feature that allows us to provide the off sun electricity. The fact that we're able to provide anywhere from up to four to eight hours of thermal storage so that we can meet peak load demands.

In terms of the status of Solar II, as you know that project has been ongoing for two to three years now. We finished the construction in early, earlier this year. This is just a picture out at the site showing the receiver. The receiver itself at the top, Rockwell International, which is responsible for the design and the construction of that receiver, and it was installed on the existing Solar I tower. The receiver's about 20 feet in height, sitting on top of a tower of about 300 feet.

The heliostats are the motorized mirrors that surround the receiver in the field, which approximately 2,000 of those out there at Solar II.

Right now the status is that we're currently going through our start up and test phase, and we intend to operate over the next year or two collecting additional performance data.

As you know the Solar II project has been a major collaboration involving both the federal government, the Department of Energy, the CEC and several industrial participants. Those have included Southern Cal Edison, the Los Angeles Department of Water and Power, Bechtel, Rockwell, SMUD and many others.

Commercialization has always been our next planned step, and we see that as a near term opportunity.

Right now the plan, Bechtel and Rockwell are, as you know, a very, we're entrenched in the California marketplace. We're both located here in California. We're very serious about commercializing this technology. Our plans at

the current time are to be ready to initiate commercial project bids by late 1997 or the very beginning of 1998.

As you know the entire southwestern part of the United States is an ideal location for solar projects, including California, which we would love to be able to have the opportunity to put in our first solar plant in the State of California. We think there's substantial benefit that could be gained within the state.

One of the things we see -- could you go back to the previous slide -- there are a couple of options. One is the solar only plant configuration that could go in here which would be anywhere from possibly 30 to 50 megawatts electric, or conceivably a combined cycle hybrid plant which would be 150 to 300 megawatt electric with a solar portion of approximately 30 to 50 megawatts.

The hybrid plant, this next one-line drawing is just an example to show you what we mean by a hybrid. It's essentially a solar assisted combined cycle power plant where the solar portion of the plant is the same as what you've seen previously with the exception of the fact that it's providing a boost or a solar assist to the traditional combined cycle part of the plant by way of transferring energy across the salt to air heat exchanger as well as in your evaporator.

I mentioned this earlier that we are California based. We intend to continue to aggressively pursue the market, and in parallel with the activities that we've been doing with Solar II over the last two to three years we've been aggressively pursuing market development in interest both domestically as well as worldwide.

Of particular interest to us is the bulk power market potential. I have a slide here that shows what we project as a potential power tower share of that market. You can see not only within the southwestern part of the United States but internationally there's a substantial market there in the near term that we're very interested in pursuing.

These are three countries in particular that we've already initiated discussions with, and we've been talking with several high level energy officials within these areas. Egypt, India and Brazil. They've all expressed a very strong desire to continue negotiations with us and to try to get a power tower built within

their countries.

One thing I'd like to simply say is that our intentions are good. As I indicated we feel that our progress at Solar II has been substantial. We've certainly proven the molten salt technology. We feel very comfortable about the state of readiness to proceed into the next step. We do, however, feel that we could use some help, and we think the AB 1890 funds would provide us the help we need to get over the hump.

One possible way that we've considered pursuing this is by way of a dollar per watt buy down which for the 30 to 50 megawatt electric plant that I mentioned earlier would translate to an approximately 30 to $50 million assistance over about a three-year period is what we were envisioning starting in 1998.

What this would do is essentially this buy down would accomplish several things for us. First of all, the first of a kind engineering, risk mitigation, offset of plant capital costs and start up of production facilities, all early project type expenses that we need to be able to overcome.

We feel that this in turn would translate to an electricity cost for a 50-megawatt electric solar plant on the order of six to seven cents per kilowatt hour, which we consider to be very competitive in today's market.

To accomplish these objectives we feel that the timing of the funding needs, as I indicated, would be over a three-year period starting in 1998. Approximately $50 million would be needed. And we think that that in turn would allow us to get our foot into the door to get the first project established and then lead to further sustained markets.

And so I think just in closing to try to summarize, and I'd like to again state that the primary intent today was just to make you aware of the fact that we consider ourselves emerging, that we've put a lot of time and effort and investment into Solar II. We're satisfied with its performance to date. We'll continue to operate and collect performance data, but in the meantime we choose to aggressively pursue the market development activities and hopefully be ready for our first commercial project bid by late 1997 or early 1998 as I indicated.

We feel we're ready and hopefully you'll give us some consideration as

you make your decisions regarding funding allocations in the years to come.

Thank you.

PRESIDING COMMISSIONER MOORE: Jan.

COMMISSIONER SHARPLESS: Yes. I was looking at your back sheets here on financial assistance and the dollar a watt buy down. This is premised, you said that you'd be able to perhaps come forward with a project by 1997 or 1998, is the premise of the dollar watt buy down getting to six to seven cents based on a one project or?

MR. ROGERS: That would be for the first project. We think that that dollar per watt buy down gets us from about a little over $3 per watt to about $2 per watt.

COMMISSIONER SHARPLESS: Okay. And the timing of financial assistance that goes from 10 million, 15 million to 25 million, starting in '98 to 2000, that's for the one facility?

MR. ROGERS: Correct.

COMMISSIONER SHARPLESS: That's for the one facility.

MR. ROGERS: We indicated that would be the first project, and those funds would be geared toward addressing those four items that were in the bullets which included the first plan engineering, the risk mitigation and so forth.

COMMISSIONER SHARPLESS: I see. And is this also premised on like a revolving loan kind of program?

MR. ROGERS: Well, I'm assuming that you've seen a previous submittal from SEIA, which was the umbrella submittal that talked about various options or mechanisms for doing this, and there really are a couple of ways that are talked about in that write up.

One is an up front technology cost buy down that would go to the private firms developing the design, or it could be something that is on an annual basis. I don't think the details have been worked out yet, but there were two or three different options that were proposed in the write up.

COMMISSIONER SHARPLESS: Which is going to work for your technology?

MR. ROGERS: I personally think that what we would like to see happen is to be able to compete for those funds on an annual basis in response to solicitations for renewable or emerging renewable energy projects, and those one-time upfront cost buy downs would be very helpful, I think, to help us get through those early stages.

COMMISSIONER SHARPLESS: So you conceive in your mind that there would be a four-year competitive kind of program that would allow emerging technologies to come in and receive upfront funding costs.

MR. ROGERS: Well, that's certainly one option. You know, I think that, you know, the SEIA position is more or less, you know, the focus today should be on how to allocate, you know, focus on establishing the mechanism for allocating the funding that would be coming in over this four-year period between existing and new and emerging technologies. And then in turn, within each of those broad categories, on an annual basis you could compete for those funding sources.

In other words, we, as an emerging technology, would be competing against other technologies that would be considered emerging on an annual basis for those funds based on market based mechanisms at that point in time.

COMMISSIONER SHARPLESS: And how big of that fund do you think we need to, how big do you think that fund needs to be in order to cover those technologies?

MR. ROGERS: Well, the SEIA position in the paper and the material that's presented earlier says that they're proposing approximately 50 percent of the funds go to the existing, and another 50 percent to the new and emerging with that part being split equally, 25 percent to emerging.

COMMISSIONER SHARPLESS: Because I just was adding up what we've heard so far from solar. We've got 96 million to PV, and 54 million to SEGS, and 50 million to your project. Does that add up to 25 percent?

MR. ROGERS: Well, again, all I'm speaking for in terms, yeah, SEGS, they're existing for one.

COMMISSIONER SHARPLESS: Oh, they're existing. Okay.

MR. ROGERS: And, again, I'm just, I'm trying to give you an example

of where we would be coming from down stream is we presented proposals on an annual basis in response to solicitations, that's the dollar amount that we think from our perspective that we would need in order to get over the hump to get through that first project successfully.

COMMISSIONER SHARPLESS: Okay.

PRESIDING COMMISSIONER MOORE: Thank you. Barry Butler.

MR. BUTLER: I'm Barry Butler from Science Applications International Corporation, and I'm also a Board Member of the Solar Energy Industries Association.

Perhaps I can shed some light on the last question about what the SEIA proposal is. And Dale highlighted it, but we put the SEGS plant, it could be a new renewables or it could be in solar thermal under existing plants, and that's where that 54 million would go and roughly 136 million would be spread amongst the emerging renewables; 30 million for power tower, 10 million for dish sterling and 96 million for photovoltaics.

So that's how the pieces add up. And if you added the SEGS plant in and called it emerging, then it would be more than 25 percent.

And that gives me a good excuse for using this chart I showed you the last time. But when I was here the last time you also remember that I should have put a rug on this chart because it seemed like the renewables that we represented were being swept under the rug. And so I went away thinking about how I could justify that to myself and see where we fit since we had made attempts to reach a consensus and be part of the larger consortium.

This chart which is in the pack that you have was an attempt to do that. And what we looked at is, you noticed Don Osborn mentioned the left-hand side you see electricity value, bulk power on the top, distributed power on the bottom. One is where you're dealing with the utility in selling the bulk power that they'll market. The other is the distributed power which has a higher value because it's closer to the customer.

And then across the top we have subsidy versus investment. And so subsidize are things that we did because we thought they were smart at the time, and

I think that, you know, the standard offer four and those other activities were brilliant, and the pioneers of renewables came forward to meet those challenges. And so we don't want to speak against the notion of keeping those renewables going.

However, we think that the renewables that SEIA represents most clearly the power towers. Now the photovoltaics, concentrating photovoltaics, dish sterling and the flat plate PV, tend to move to the bottom right of this chart which represent investment in distributed power systems where we think there will be large growth in the marketplace.

And Howard has done an excellent job of defining what that market is. Don Osborn has indicated from SMUD that he thinks it's real. And our company believes it's real because we're investing some money in our dish sterling technology to get there.

Power towers are an investment for base load power. And they're on the right of this chart. So if we look at the wind, biomass, geothermal and SEGS proposal, I don't call it solar thermal, it's really the systems that are on line, you know, they cover the upper left-hand part of this block. And they say, you know, 90 percent, 92 percent, should go to that and a little bit should go for this investment.

We disagree with that of course. We say that 25 percent should go for investing in power towers and the distributed technologies that we represent and that, you know, we certainly don't want to not support our renewables industry, but there's a reason for this discrepancy and there's a reason why there's not a consensus, and that is that we don't think eight percent is nearly enough to bring the jobs.

My company alone, if we're successful in building our 400 units, we'll generate 1200 jobs in the State of California in the next five years. And not only that, but we'll buy from people in California, we'll pay taxes here, we'll do a lot to help the economy.

So this was my attempt, and this is a new chart, to try to reconcile why there was this difference. Because I support all renewables, and I couldn't understand why the renewables industry couldn't get together.

And it's this shift. Deregulation is moving us down to the right. It's moving us into new investments and toward distributed power. And that's a powerful motivating force. I don't want to leave these guys stranded in the upper left, but where we're headed with the emerging technologies, it's the lower right.

And I've heard people say to me, well, emerging is just a word that slipped in during the process. And it's not. Emerging is a set of technologies that have been invested in nationwide. You know, the federal government's investing, and there are companies investing. Just like the folks with PV are saying if we have a way to get to the market with the buy down that Howard proposes, my company will make the investment in the capital it takes to build the jobs in California.

So I couldn't resist doing that because I really went away from the last meeting perplexed, and I thought if I was confused, perhaps there were others who hadn't looked at this clearly. So I offer this as our way of saying may the balance subsidy versus investment and balance the bulk market versus distributed. And that's a job that I don't presume the industry can do by itself, and I believe that you are the right avenue to do that, and you will do it. And I believe rather effectively, which is why I keep coming back.

This just shows where we're building our dish sterling systems, which are on the upper left, and we're working with Southern Cal Edison and now SMUD to try to put systems in California. We've also got systems going in in Nevada and Arizona. So we're building five at the time.

You notice we didn't take off the SEGS plant or the Solar II. And we believe in all solar, and it's good for Southern California because that's where the sun is.

My company also makes heliostats, a little round dish we have on our dish sterling system. We can rearrange those and make a nice flat mirror, and so we are part of the power tower business also. And these are manufactured in Southern California. We're, I think, the only friendly manufacturer here. Rockwell and Bechtel would use these in their system.

I put this chart, and even though it was from an earlier testimony, you might have slipped past this, this has been put by Arizona, and basically it's their

view of the distributed benefits of the technology. And the little bars on the bottom of each of the black and then the white gray bar on the bottom represents value, and the top represents estimates of where the prices are going to be.

And if we look at power tower, because it's dispatchable, there's a good overlap between what we think the benefits and the costs are.

If you look at dish sterling, which is second down from the top, you see that there's a good overlap benefits and costs. Because we get distributed benefits.

And the same thing for photovoltaic.

The reason we see that there's a gap, in the power back tross [phonetic] and we don't see them being built in this country.

These numbers may not be accurate, but they are certainly what utilities are using to judge the viability of our technology and why we're able to get investment to build jobs in California.

That one just shows the falling price of our technology over time.

[Laughter]

MR. BUTLER: It was falling a lot more steeply than I thought, but you know there's been a lot of federal investment which went through a whole bunch of iterations and now it's gotten us to something that we think we can sell.

Where are we on the price? You know this is our system, and remember our dish sterling system has the ability to run on liquid and gaseous fuels, so it is dispatchable in the 25-kilowatt size. And if you just use 25 percent fossil fuel, which is what the circle is around over there, you can see that we can get into the 10 to 12 cents a kilowatt hour range at the $4 a watt which is our target.

And as Don Osborn said, we think people will buy it. This is the chart we put in this testimony which shows we're at $10 a watt now, and we'd like the utilities to believe we're at $4 a watt. So we want to fool them by asking CEC for a subsidy. And you see that the subsidy goes to zero in the last year.

Because we believe that when we put the $10 million worth of capital that my company will have to invest in plant and facilities in that we will have reduced the cost of this equipment to the real $4 a watt, and then the business is prospering.

COMMISSIONER SHARPLESS: Help me out here. There's some who need to get their cost down to $3 a watt, some who want to get theirs down to $2 a watt, you think you're prosperous at $4 a watt; explain to me how that makes sense.

MR. BUTLER: If you look at each of the technologies, because we can burn fossil fuels in our dispatchable, that's different from a photovoltaic. They use the grid for storage. So they have a different target than we do. We can go to a remote location and provide dispatchable power. For photovoltaics to do that they would have to add a battery system and some other ancillary hardware which would change their target price numbers.

COMMISSIONER SHARPLESS: So the answer is you're targeting remote areas.

MR. BUTLER: That's right.

COMMISSIONER SHARPLESS: Where the costs are high. And so this becomes competitive.

MR. BUTLER: Correct. We're basically --

COMMISSIONER SHARPLESS: And how much of that is there in California?

MR. BUTLER: I should let Don answer that, but we think there's probably 20 megawatts of that out there, if you could address it all. I'm not sure we can address anywhere near that amount.

Southern Cal Ed did a study and so did PG&E, both would show, you know, the study of Carl Weinberger of Service Beyond the Wire, and that's where I'm getting the number of 20 megawatts from.

COMMISSIONER SHARPLESS: Thank you.

MR. BUTLER: This one you've already seen. It was our plan to use 10 million of AB 1890 money to leverage 15 million of DOE money and then create the 400 systems, building about a hundred systems a year which would get us on the target to produce the 12 cent a kilowatt hour.

That one Les has already shown. So that really concludes my remarks.

PRESIDING COMMISSIONER MOORE: Thank you very much.

All right. With that, I am going to turn now to our Staff. And in the

sense of proposals, I'm going to turn to Marwan who has some remarks to make about a document that has been circulating from the Staff.

And then I'm going to turn to Bill Chamberlain who has some remarks to make about a paper that will be submitted today.

Marwan.

MR. MASRI: I would just like to point out that we don't really have a proposal. We have some ideas the Staff would like to put out that incorporate some features that we have not seen in proposals presented by others so far. And they are merely ideas for people to consider and give feedback on, and they are not, none of those are proposals at this point.

And Cheri Davis will be presenting Staff ideas.

PRESIDING COMMISSIONER MOORE: Cheri, you have the floor.

MS. DAVIS: So underline the word "concepts" on here. By the word "concepts" we mean they're not proposals. Also, they're not fleshed out. They're concepts only.

And they're our attempt to expand upon the range of options that are available so that we can think about other options. And we do not intend for them to reflect any stakeholder positions in any way. Any similarities are purely coincidental.

PRESIDING COMMISSIONER MOORE: To persons living or known to be dead, right.

MS. DAVIS: First, we want to establish a terminology that we think might be helpful in writing the report and for discussion purposes. I numbered these one, two and three, but they don't have to be in this order.

The first is broad allocation where we're allocating funds between broad categories, such as existing, new, emerging, renewables marketing and/or CTC rebates.

The second would be technology allocation where we're allocating between the different technology industries.

And the third is distribution where you're distributing funds or credits or whatever to specific projects or consumers.

What the options we're going to be talking about in this presentation are only steps two and three, technology allocation and distribution. And they also cover existing and new technologies. We think that emerging technologies will have, require further consideration and perhaps more complex criteria for funding.

We talked about the triage principle already today, and we think that's the best criteria for evaluating allocation distribution strategies. And it's a metaphor for how we can most efficiently allocate funds.

In the medical field, triage is the method of sorting and allocating treatment to patients according to a system of priorities where the goal is designed to maximize the number of survivors. And the reason why triage is necessary is because there are not enough resources to treat all patients. And so, therefore, efficiency is important.

And because we don't have enough funds from AB 1890 to fund everyone, we think that triage may be the most efficient way of allocating funds here. In other words, triage is a way to characterize a method of sorting through and allocating funds to renewables.

Now the way we can apply the triage principle to the renewables industry is that we don't want to provide funds to projects that don't need it. These would be projects who are healthy or maybe have a couple scratches, but the important point is that they will survive with or without assistance. Or to projects that have little hope of becoming competitive. Now I'm calling them mortally wounded. Maybe they could be salvaged. However, they eat up all or a great deal of the money if we were to attempt to treat them.

We also don't want to fund hypochondriacs, by the way.

[Laughter]

PRESIDING COMMISSIONER MOORE: I'm glad you classified this as staff recommendations.

[Laughter]

MS. DAVIS: We do want to focus spending on projects that demonstrate both need and the ability to become competitive.

Now it's difficult to do a full triage analysis because it would require

complete knowledge of technologies and the external environment. For external environment I guess the principal consideration there would be the cost of competing technologies or cost of competing fuels, such as natural gas.

So for existing technologies, at least, and possibly new technologies, cost may be used as a tool for evaluating our patients. Where a lowest cost technologies are considered healthy, higher cost technologies are more towards the mortally wounded side.

And this principle will allow us to spend the limited funds efficiently to maximize the number of survivors or kilowatt hours, whichever goal we choose.

So now I'm going to cover a few technology allocation strategies. Again technology allocations we were allocating to the different technology types, such as solar, wind, etcetera. We have three allocation strategies. Generation based, capacity based and need based.

The generation based allocation strategy is fairly straightforward. We allocate funds among fuel types or technologies based on generation totals. It says from previous year, but probably should be from previous years.

Now the strength of this allocation strategy is that it's very simple to implement and rewards proven performance. But the big weakness here is that it funds all technologies equally regardless of their level of need. So a kilowatt hour is a kilowatt hour. So healthy technologies may receive a windfall while our priority patients may not receive enough assistance.

What it does do, though, is it keeps the mortally wounded from, it does weed out the mortally wounded because the dollar per kilowatt hour subsidy probably would not be enough for them.

Next is the capacity based allocation strategy. Here we're allocating funds based on cumulative capacity instead of performance. The strength is simplicity while the weakness is again that we're, a megawatt hour, or a megawatt is a megawatt, and it rewards intermittent technologies on par with more productive technologies.

The need base allocation strategy is a combination of two things. We're allocating funds among technologies based on weighted need. That's generation

which over, the need which is measured by average marginal costs minus market price, and that's weighted by kilowatt hours. And that's for all technologies where the marginal cost is greater than the market price.

The strength is that this is a more balanced strategy. It balances need with performance, and the two tend to counteract one another. But the weakness is that cost data is very difficult to obtain.

And what I wrote here was solved by using a bid. If we were to use a bid for allocation purposes, it should also be used for distribution purposes. And the reason why is because that would minimize gaming. It prevents members of any technology industry from bidding high so as to receive more funds at this stage knowing full well that project pay out may be based on some other criteria.

Also I'd like to mention that this strategy could be modified to account for externalities if we decided to do that.

Next I'd like to cover distribution strategies. Again distribution strategies are what we use for allocating funds or credits to specific projects. And the terminology here we're using credits, assume that funds are distributed to generators as credits. They may be worth a cent a kilowatt hour or a lump sum, however we decided to do it.

Credits can be used by the generator or the consumer, but either way they must be tied to actual generation. So they only have value when a kilowatt hour is generated.

For distribution strategies, the first three repeat the allocation strategies. Generation based, capacity based and need based. And I wrote "with tradeable credits." The trading of credits will enhance economic efficiency of any of these proposals, although it's not necessary. It could be a use it or lose it provision or a use it or trade it provision.

But what trading would allow to happen is it will enable projects that really need credits to buy them from projects that maybe cannot make effective use of the credits.

I won't go over the generation capacity or need based strategies because they're very similar to the allocation strategies. They could be modified as needed.

And the strengths and weaknesses are very similar.

The fourth would be a competitive bid. In a competitive bid, credits would be distributed through a competitive bid within each industry, and this strategy would likely be more compatible with the use it or lose it policy rather than with trading. And the reason why is because it would prevent gaming.

For example, a project that has no intention of using the credits, maybe they're mortally wounded, may enter the bid in order to sell the credits once trading begins. And that's why it may not be as compatible with a competitive bid strategy.

The strength is that it's more market based. Projects have an incentive to bid low, thus minimizing the likelihood of windfalls to help the projects leaving more credits available for priority patients. And is probably the most efficient method of actually following the triage theory.

But the weakness is there is no way to ensure the elimination of windfalls without some sort of monitoring system.

Finally, I would like to say that no matter what we choose, we can only hope to come close to actually following triage and to getting a more optimal allocation of funds. Any mechanism we choose is a starting point, and we recognize that there will likely be a need for adjustments.

Also, we will welcome comments inviting from the various industries on how these different strategies would affect them. Especially the distribution strategies.

PRESIDING COMMISSIONER MOORE: Thank you.

Mr. Chamberlain, I'm going to call on you and ask you to give an overview of your document, and anyone who, obviously you depleted your annual budget by making copies, and so anyone who would like to have one.

MR. CHAMBERLAIN: There were a lot more people here this morning. I'm going to just ask someone to come and get these copies and maybe pass them around. People can read this paper in there. It's not very long actually. It's only about 10 pages.

I need to give credit for many of the ideas here to Erik Saltmarsh in my office. Erik's busy on some sort of WEPEX business today, and so I don't have

someone to handle my slides for me.

PRESIDING COMMISSIONER MOORE: Marwan's rising to the occasion.

MR. CHAMBERLAIN: As I think everyone is aware, during the course of the discussion in the Legislature that led to the enactment of Section 383 there was a lot of discussion of the possibility of marketing agents being the way to distribute funds. And so we've tried to give some thought to how that might be done.

And in particular we've looked at the language of the statute that says that our programs should be based on market principles which reward the most cost effective generation meeting the purposes of Subdivision A through mechanisms such as the establishment of clearing house or marketing agent.

Go ahead to the next slide, please.

This proposal will probably not be appropriate for all of the funds. It might be most appropriate for the existing technologies. Could be used for the new technologies, although it will be up to the Committee to decide which is the best way to handle those. I don't think it's appropriate for emerging technologies.

What we focused on first was where do we want to be in five years. Obviously we all want the industry to be competitive in five years. One way to do that is to achieve better internalization of the benefits of renewables and cost of non-renewable.

One of the things that we would propose to do is to talk to the Public Utilities Commission and perhaps the Legislature to obtain for those people who are willing to buy renewable energy some sort of guarantee so they'd be buying an insurance policy against the allocation of costs that one might expect could occur if, for example, a nuclear power plant had an accident and costs had to be allocated back to ratepayers through some sort of wires charge.

Could I have the next slide.

We also want to identify niche markets. We've all talked, we've all heard, I'm sure, of the surveys that have suggested that there are people out there who are willing to pay more than market for renewable energy. I know there are

people in this room who are doing that today, so I'm sure there are such people. And the purpose of this proposal is to test that and see how many people there are out there who are willing to put dollars behind those statements of belief.

Can I have the next slide.

And finally we anticipate this program is probably going to be a money losing proposition. When you have finite resources and you have a money losing proposition, eventually you go out of business. And that's probably where we'll be in a few years. But the purpose of this proposal is to try and make these funds go as far as possible and to hopefully provide that transition that might go beyond five years before we actually run out of money.

Can I have the next slide.

That's the last, that's the second-to-the-last slide.

Okay. So how can we achieve this. In essense, our proposal attempts to tap the power of the market. First to identify the projects that have the best chance of long-term successful transition, to identify expert market agents that are willing to base their compensation on their success in matching low cost suppliers with higher value customers, and finally the market would measure the success of our market agents.

Next slide.

The program would be one in which the Commission, or some other entity the Legislature might provide for, would seek market agents through a request for bids during each funding cycle. And I assume that would be about six months, it could be some other time. They'd be chosen by the Commission and given control of a specific amount of money through a letter of credit.

And then the Commission would choose these market agents based on their bid, which would be a market agent fee, which I'll explain, and where applicable we'd look at the market agent's success in previous funding cycles.

Next slide.

The concept would be that the market agent would purchase renewable electricity, send invoices to the Commission for payment and would also go out and sell renewable electricity to customers with the contracts directing payment back to

the renewables fund. So the success of the marketing agent and the fee paid for their services would be based on how much money is returned to the fund.

Could I have the next slide.

Actually we would make this a percentage of the amount returned to the fund over a minimum revenue target. The reason for this would be we don't want to pay for particularly poor performance. Anyone could buy a certain amount of energy and sell it to the power exchange. And so we would figure out what that minimum revenue target would be, and then ask people to bid their market agent fee on the basis of the amount over that minimum revenue target.

Here's, let's see, so if we assume that the Commission might be looking in the first six months of 1998 for $30 million, putting $30 million out on the street in this program, we might have, say, three marketing agents. We might select them according to their demonstrated experience and proposed market plan, and low bid, of course, would be a substantial factor in this first cycle.

This is an example which is in the paper. If the market agent has $10 million to spend and the minimum revenue target is set at two million, it's not particularly important how accurate that minimum revenue target is. Presumably we don't want to set it too high, but if you set it too low you can expect the bids to be lower as a result.

This particular market agent bids one percent, and through his expertise manages to buy a lot more energy than the minimum revenue target assumption, goes out and sells that energy to, by partnering with organizations that have lists of people who care about these things, sells that energy for a lot more and manages to return seven million to the fund. It's still a money losing program, but it's a lot less money losing than it might otherwise be, and the marketing agent receives fair compensation for their services.

In later cycles new market agents might be selected, but particularly successful market agents would have an edge. They'd be free to vary their market agent bids, recognizing that they're still competing with other people.

One limitation would be that the market agents need to work for the market agent fee alone. We would have to come up with ways of preventing them

from engaging in self dealing or any other arrangement in which they would receive compensation from suppliers because obviously the purpose of the program would be defeated if they did that.

And, also, as many other people have mentioned today, the only kinds of projects that should be eligible for this are those that are really in the competitive market. That would not include cost based utility projects until they'd been spun off or QF projects until they had been renegotiated.

As an option, the Commission could, if it wants to be sure that this program covers a full range of technologies, it could specify minimum percentages of, for example, wind, geothermal, biomass, solar, that the marketing agent is to acquire. And I'm proposing, however, that the market agent be given some flexibility and that those minimum percentages, if they're used, not add up to a full 100 percent.

The advantages of this program would be that most of the important decisions would be made by the market rather than by government. The success of marketing agents is fairly easy to measure under this program. It promotes, hopefully, longer term market relationships that will sustain a market beyond the time of the program, and we hope the cost of administration should be fairly low because we don't anticipate having to supervise the market agents a whole lot.

As I mentioned before one limitation is this probably would not work for emerging technologies. And based on what I've heard today it might not be the best program for new technologies either, although it could be used for that.

And in addition we do need to be sure, it might very well be possible to police the possibility of marketing agents making off line deals with suppliers. And that will have to be looked at. The paper contains a couple of suggestions of how we might deal with that.

That's all I really have. I offer this for your consideration, and I'm sure that other people have a lot of comments on it.

PRESIDING COMMISSIONER MOORE: Sure, and I assume that this will be the focus of some discussion at the December 3 workshop.

Let me just ask one question, and then I will turn, I promise, to the

stack of names remaining.

And that is, Bill, a cynic might look at this and see that this has some elements of the portfolio technique or the minimum purchase or the collective union of must buy that was disavowed by the Legislature, and we need to make sure that we're not revisiting that. So could you respond just to clear that up so that no one in the audience is under the impression that we're trending that way.

MR. CHAMBERLAIN: Yes. That's why I indicated that that was an option that could be used. And obviously the more of those minimum percentages, the higher a percentage of the amount that you were putting out that those minimum percentages included, the more you'd be toward a sort of a portfolio standard. And the lower the amount the more you would be trending toward open market competition.

I put the option in, however, because I recognized, and I believe that almost everyone who's testified today, was a participant in the legislative arena, and I believe that the Legislature and the participants in that debate probably anticipated that this would not be a one-technology program. And this kind of open market competition type of program that just tries to get the cheapest kilowatt hours and sell them for the most that they can be sold for might tend in that direction. So that's the reason I put the option out there.

PRESIDING COMMISSIONER MOORE: Thank you.

Jan.

Thank you. Are you going to attend the December 3 hearings as well?

MR. CHAMBERLAIN: Unfortunately, I have WEPEX business that day.

PRESIDING COMMISSIONER MOORE: I've been there. Okay. Thank you.

All right. Let me just suggest to you we have 12 to 15 names remaining. So with that in mind, we have an hour to go before the noticed end of the hearing. I may ask you to confine your remarks to in the neighborhood of about five minutes at the outside, and we'll see if we can get your thoughts on the dais.

Mr. Kennelly.

MR. KENNELLY: I think there's three of us that could address the same subject.

PRESIDING COMMISSIONER MOORE: Okay.

MR. KENNELLY: That would be Mr. Wheless and Mr. Purves.

Jim Kennelly, Project Development representing Orange and Sonoma Counties, City of Sacramento and NEO Corp.

I would just like, you have a proposal from us, and we modified it hopefully to take into consideration your concerns at the last meeting. And based on some apparent concerns today, we will modify it one more time and see that that's here by next Monday.

I'd like to just address one question that was asked earlier and then pass on to these other people that would like to speak that time.

And the question was asked about why hasn't all the parties gotten together by now. And certain ones are left out, namely landfill gas and perhaps hydro.

PRESIDING COMMISSIONER MOORE: That was a rhetorical question, by the way. We're pretty clear on why it hasn't happened.

[Laughter]

MR. KENNELLY: I think that's right. Are you aware that there were groups that banded together under the PUCs working group. Because we were a part of that, and we were a part of a coalition that was actually EDF, San Diego Gas and Electric, Laidlaw, several counties and cities and developers. So it wasn't that there was an island there. We were one of six proposals that were in that working group, and, in fact, were just a part of that coalition. Not at all the leader.

PRESIDING COMMISSIONER MOORE: We understand that. We also have contact with one of our colleagues at the PUC to understand what they're doing on their side, and we fully expect that one or both the Commissioners involved in that will be sitting with us in January in our hearings.

MR. KENNELLY: Then I think there's, on that point, there's nothing for us to say except to say the reason that the proposal you now have was written by us was because EDF was out of the country at the time, and what we proposed was

essentially what he had proposed at the very first meeting. Taken at the front end, though, a piece from the geothermal folks in the first meeting where they had suggested perhaps the money could best be divided up and that would still be a marketing approach. So we added that. There's probably no reason to keep that in that way because that was pulled out.

So having said that, the reason that the cities and counties are here is not that we have any beef with any technology. We support all of them here as you've heard and as we have heard. There is a lot to be said for all the technologies, and we're not here to sell landfill gas unless that becomes necessary. It was not our intention, we didn't come prepared to do that.

All the cities and counties are looking for since the very first meeting in Los Angeles two years ago was a nondiscriminatory treatment, an open bid process, and a second thing that you're not dealing with that they are very concerned in, is that whoever gets first direct access, they wanted to be a part of that. Because they feel that they represent several million people in California, all of which would benefit as soon as a city or a county was in direct access. Much the same as they would in this proceeding.

Nearly every city and county has a landfill and has something to benefit by renewable and the purchase of that.

I think with that I'd just like to turn it over to the other people that want to speak. If there is any questions regarding the modification that we sent in to you, we'd be glad to answer those questions.

COMMISSIONER SHARPLESS: With regard to that last point, that deals with making sure that landfill gas is included in the certification process for direct access?

MR. KENNELLY: Yes. In fact, we didn't think there was going to be any issue until today.

You had asked earlier, we didn't speak, we don't have any problem with certification that's been suggested. We don't have any problem with the date for new versus new that's been suggested. The definitions of new and the technologies have been presented by other people, those are all fine.

PRESIDING COMMISSIONER MOORE: Thank you.

All right. Alan.

MR. PURVES: Alan Purves, representing Laidlaw Gas Recovery Systems.

I mentioned last week that I started coming to these hearings with the purpose of being educated and learning about the process. I'm old fashioned enough to believe that you learn by listening, not by talking. So I came a little bit more prepared this week to make a presentation rather than the off-the-cuff comments I made last week.

Our business is landfill gas recovery. We operate 10 projects in California. All small. Our total generating capacity is about 40 megawatts. Most of these projects are SO4 contracts. We've been a first electrical generating projects went on line in 1981. So many of our facilities are already over the cliff as it's described.

By way of background, I would like to make the editorial comment that the firm pricing periods wasn't viewed, I don't believe, as a giveaway to the industry, but was instead a forecast of how the divided costs would go over that 10-year period. And we felt at the time bullish enough, and in retrospect foolish enough, and not always to take the hundred percent firm pricing, i.e., we took less than the hundred percent firm pricing and bet on the market.

We believe in the long term that industries should be and need to be self supporting. I don't believe in any business philosophy that's signed on the government funding support or mandates in the long term.

So our aim in trying to keep landfill gas as part of the qualifying industries here is to remain competitive with other technologies because we will be competing with them in an open market within five years.

We support, or let me back track, we don't have any firm views on the allocation method other than we believe basically it should be a level playing field. I'm somewhat, I guess, astonished to see the concept that the most expensive technology should be rewarded with the greatest funding. And if I had known that that was the case, maybe I wouldn't have been so cost efficient over the last few

years, and maybe I need to change my business methodology. I can certainly increase costs if that's going to be a basis for funding in the future.

[Laughter]

MR. PURVES: So we believe that there should be no differentiation between the technologies and the funding. It should be for existing technologies an equal distribution or based on a bid.

The bid process we also believe encourages new and emerging technologies to have a say in the piece of the pie they get. I should say that I certainly don't envy the position that you have over the next few weeks in allocating this $540 million. That may decide the viability of some industries and some specific businesses.

I think maybe the PV industry helped you a little bit by saying we want $96 million or zero. And so they may have helped you in that decision making process.

Specifically on landfill gas, federal legislation does require that large landfills control landfill gas, but as has been mentioned earlier, there is no requirement for a beneficial use. And it's the beneficial use of that fuel source that we are trying to support.

The cost of generating electric power from landfill gas is compatible to other renewable technologies. It falls within the broad four to seven cent range. There is a cost of the gas. The landfill developers are not always, and quite seldom are, the same as the landfill owners. So any suggestion that the tipping fees, etcetera, can be used to fund the landfill gas to energy business I think are misplaced.

And secondly, the landfill tipping fees are set in the competitive environment to attract waste to the landfill. They certainly do include all of the expected closure costs of the landfill, but nothing that would be construed as the beneficial use of landfill gas.

That's my mini commercial for the landfill gas business. Just a couple of other issues.

There was a suggestion last week that I have not had, I'm please to say, any re-issue of today, but there was a suggestion that some of the limited AB 1890

funds be made available to ensure environmental compliance of existing facilities. That, again, somewhat astonished me.

And not only did I not support it, it led me to the thought that one limitation on the use of AB 1890 funds may indeed be the environmental compliance of current facilities. So rather than use some of the funds to help old technologies meet their environmental requirements, make it a limitation on AB 1890 funds that they must be in compliance with their environmental requirements.

And I would end there and pass on to --

COMMISSIONER SHARPLESS: A question: Along the lines of environmental compliance, is there a provision that would prohibit any further flaring of gas from landfills?

MR. PURVES: Not that I'm aware of, no.

COMMISSIONER SHARPLESS: I had thought I heard that there were new regulations on landfills for increasing costs for meeting those environmental provisions. None that you're aware of.

MR. PURVES: No. The only requirements that I'm aware of are for the collection of the gas, and the flaring is the cheapest method of getting rid of the gas at that point, but obviously has no beneficial use.

COMMISSIONER SHARPLESS: So what's the point of collecting it if you're going to flare it?

MR. PURVES: As to prevent immigration. It's a controlled collection rather than an uncontrolled collection.

COMMISSIONER SHARPLESS: So rather than explode it, you're going to increase CO2 emissions into the atmosphere.

MR. PURVES: It's certainly not my choice.

COMMISSIONER SHARPLESS: Okay. Thank you.

PRESIDING COMMISSIONER MOORE: Thank you.

Sir?

MR. WHELESS: Ed Wheless, L.A. County Sanitation Districts. And to your last point, the primary thing is to reduce the methane emissions to the

atmosphere, which are many times more harmful than CO2.

COMMISSIONER SHARPLESS: Yeah, but that's really the point. If, in fact, environmental compliance, the cost of environmental compliance is going up, I don't know why you couldn't take that cost and provide it to the landfilled person who's using it as a fuel cost. Because really it's an avoidance cost.

And so you're going to have to increase either the cost of your operations, and that then goes to your issue of competitiveness, tipping fees and so forth, if the cost of the landfill goes up because there's additional environmental compliance involved in it, somebody's going to have to pay.

If the way to comply with that environmental regulation is to deal with the landfill gas, then it seems to me that you should connect the dots. You should take the environmental compliance and apply that to the fuel cost so that you can lower your cost to become more competitive or at least get some benefit from it.

Is that just way off base?

MR. WHELESS: It is in the sense that flaring is just as environmentally sound as any other technology we've talked about.

COMMISSIONER SHARPLESS: Flaring is as environmentally sound? Well, I don't want to get into that issue.

PRESIDING COMMISSIONER MOORE: Let's not.

COMMISSIONER SHARPLESS: I think that's probably a debatable issue.

MR. WHELESS: No. I mean strictly from an emissions, from an environmental emissions, flares are quite good at reducing, at eliminating the methane, true combustion, and providing the same CO2 that you would get from any other type of combustion, and also eliminating the hazardous compounds, the OCS and the like.

So all the regulations have been saying --

COMMISSIONER SHARPLESS: Sorry, no buy here. No sell. But that's not the point of today's hearing.

PRESIDING COMMISSIONER MOORE: Well, let's go back to your

testimony. I'm going to have to ask you to really focus your testimony because we're going to run out of time. Okay.

MR. WHELESS: I just wanted to say that rather than representing other industries and the like, I am here representing a public agency that serves five million people and 75 cities in Los Angeles County providing waste water treatment for 550 million gallons per day of waste water treatment and disposing over half the solid waste generated in Los Angeles County.

That I wanted to be certain in saying that we want both biogas, in the form of digesture gas, included with the landfill gas, and that lumping these two together we do include almost all the cities and counties within California.

As far as it was said that it was an allegation that we may need funds for facilities, and in that regard I'd like to invite all the Commissioners as well as their Staff to come visit all our facilities. And I can also show you facilities, landfills, that are flaring the gas because they're not cost effective.

As far as the overall program, I think what we would like to see is support for the renewables in the new future, over the next four years as a bridge to when the market is available. We would like that there be programs be selected for the public interest and not just for the interests of the project developers. That the programs should provide customer choice. And that funding should reward the most cost effective generation and the most desirable generation as determined by the customers themselves.

PRESIDING COMMISSIONER MOORE: Thank you.

All right. With that, I'm going to turn back to my list which has some more general comments.

Mr. Weisman, Ken Weisman.

By the way, I should add if you have written testimony or copies of it, we would appreciate having copies of it for the docket.

MR. WEISMAN: Ken Weisman, as it sounds, not necessarily so. I am with Consumers Utility Advisors. We are a Kern County based company formed two years ago as a subsidiary of WZI, an environmental engineering firm. Our firm's mission is to advise our agricultural and energy producing clients on issues

relating to electrical deregulation.

Long before AB 1890 we were working with the various stakeholders to preserve agricultural biomass as an economic option so that we could reduce the amount of particulate pollution caused by open field burning.

In the past week talk of further controls from Washington D.C. emphasize all the more to our industry of agriculture the importance of preserving biomass to energy for particulate control.

Our proposal devises a cycle in which the farmer is the major recipient of the economic benefits stemming from the biomass to energy process. This can be achieved through a co-op structure similar to other agricultural cooperatives. The co-op would own the biomass facility, be responsible for chipping and hauling, manage the offsets and would be a direct access provider of electricity to its members who provide the fuel in lieu of open field burning.

Now, obviously at this point I come in conflict with the Biomass Association. We had thought we'd just kind of be an option to you in biomass, but we didn't expect to be charted out. So we don't really have room under the new or what I guess is research category as proposed by the coalition. Which, therefore, if we can do it more efficiently, we don't get CTC relief unless we happen to own an existing facility.

And, yes, it is the fuel, stupid, but if you're smart enough to control your agricultural fuels, we don't then think we'll see them discounted as they currently are. Often in favor of subsidized construction and green waste that's trucked into Kern County from Southern California. Now, open field burning in that process increases as does the resentment that we're burning Los Angeles' garbage.

Now, using the Biomass Association's two and a half cent fuel cost as a co-op, we don't have to wait five years to get to five cents power. We're there now. Indeed, in Washington State a public utility was able with fuel costs to produce at 4.65 cents. We believe we would have even more cost cutting incentives, especially if more environmental controls are put on the agricultural industry and open field burning.

Now, trying to find a place on the coalition's chart, the 30 megawatts of currently unused ag biomass that we see available in the Southern San Joaquin Valley, and assuming a five-year four cent CTC, it would cost about a million dollars a megawatt, $30 million for approximately six percent of the total funds available.

Now, whether we retrofit an existing biomass facility or build a new one should be based on good economics and best technology; not based on whether you are an existing member of the Biomass Association.

I get very nervous when the proposal from the Biomass Association is built on assumption that CAL EPA, in all their wisdom, is going to come up with a cost shifting charge that will be charged to those who benefit from biomass. And with all due respect to my former colleagues at CAL EPA, much better that we in agriculture handle our own problem and not invent yet another market distorting charge that blurs true competition.

The Consumers Utility Advisors believes that your Commission should give priority to promoting the revitalization of ag based biomass to energy industry in a manner that promotes self sufficiency, and not only reflects the intent of AB 1890, but also furthers the objectives of the Clean Air Act.

The challenge placed before you is to determine a policy which promotes renewable energy while fostering a competitive electrical generation market. We recommend you not allow the allocated funds to become a subsidy but be prioritized based on a project's economic viability, its environmental benefits and its attention to total resource management.

Projects, such as ag biomass, demonstrating long-term sustainability and definable environmental benefits, must be given preference over projects unable to make that demonstration.

Now, having spent most of my life in the agricultural industry, believe me, when you plant a permanent economic incentive, we will come.

Thank you.

PRESIDING COMMISSIONER MOORE: Interesting comments. Thank you very much.

COMMISSIONER SHARPLESS: I would ask, so, Ken, what you're

saying is that you're interested in a CTC rebate system that would somehow --

MR. WEISMAN: Back to the utility that would handle and distribute the power in this co-op.

COMMISSIONER SHARPLESS: So to the co-op.

MR. WEISMAN: To the co-op. Because the co-op would, and certainly in Kern, Tulare, Southern San Joaquin Valley, you're going to be close to your fuel source, those people who would have access control of the fuel cost, and who become very concerned that agricultural burning, just even as a viable option in the regulatory environment.

COMMISSIONER SHARPLESS: So the scenario would be that -- you haven't built this facility yet.

MR. WEISMAN: No.

COMMISSIONER SHARPLESS: But you would have enough customers willing to sign up to have an agreement that you could take to the bank.

MR. WEISMAN: Yes.

COMMISSIONER SHARPLESS: It would become viable because you'd have a CTC buy down. And that would be over a four-year period of time, and that would be enough to make your operation competitive on a long-term basis?

MR. WEISMAN: We believe so. We believe if we can do as in Washington, and certainly when you have control of the fuel cost, especially if you have other environmental constraints that come what we think may be very soon anyway, it becomes very competitive.

COMMISSIONER SHARPLESS: One of the things that I've noticed about ag biomass is the fact that your fuel sources are ciprocal, and sometimes in trying to put together an economically viable fuel stream you can't always just depend on one agricultural biomass source. You need more than one.

In the valley, I'm not quite sure what you have in mind in terms of a biomass fuel source. Would that be more than orchard trimmings?

MR. WEISMAN: Primarily orchard trimmings. As was discussed by the association, there are problems with slagging and other things which do need research. To take other biomasses, for example, the rice straw, the silicates, some of

the same problems with cotton stocks. We believe, and as the one large existing plant in Kern County, there is significant under utilized biomass. Primarily just because of our fruit orchards. Almonds, primarily, which have tremendous, you know, at the end of 20 years you take them out because they're no longer producing. That's an expanding business. And there is storage in there.

There are those things certainly to work out, but with large growers in a close area, we think it's a very viable economic option. And we are not trying to bash the biomass. We are saying we can be competitive in our arena without a subsidy, and that differentiates us from saying we have to use an existing facility.

We have looked at a couple of existing facilities and think we might well say, yes, let's take a look at that. And talked with Mr. Judd and explained our approach. But don't tell us it has to be an existing facility.

If technology says you're better off to go and do something different, and in the process you get the environmental benefit and you get competitive electricity.

Thank you.

PRESIDING COMMISSIONER MOORE: Thank you.

Roy Sharp.

MR. SHARP: I'm Roy Sharp. I own and operate Sharp Energy Incorporated and Royal Farms.

And I would like to comment on Alan with Laidlaw that it appears that I've been running in the wrong direction all this time, too. Because we tried to do it as economically as possible. And if it's going to take higher costs in order to get help to promote a program, then something has to change.

I have a copy before the Commissioners I believe that was presented this morning. I also had a copy that was put in October 23 when I was not in the country, which probably has not been read.

PRESIDING COMMISSIONER MOORE: I have that. And Jan has it, too, but not at this dais. Go ahead.

MR. SHARP: Okay. In order to deregulate California energy production and sales, which is what I think the total goal is, it needs to allow for free

competitiveness and free market pricing. It has to reduce energy costs to the consumer and encourage development of renewable sources of energy production and encourage improvement of air and water quality. I see those as the goals of the Commission and 1890.

We would like to keep our proposal in the simplest possible form. We think that we can accomplish these goals. Rather than taking funds for building or improving facilities, we feel very strongly that the incentive should come from the value of the KWH. If those incentives are guided and directed through production of kilowatt hours, the incentive will be there to produce it, and especially if you have to bid for it, it will be put at a competitive basis.

Rather than go through all of these things that have been discussed already, I here today request for capitalization and so forth to drop from $9 a watt to $4 a watt.

I speak directly on anaerobic digestion basically with livestock waste, which in California is a very large amount. We put in our operations, which can be multiplied in California, especially through the dairy industry, at one and a half dollars per watt. We have the potential of probably producing 350 megawatts in California with this type of energy. And yet it was never even kept in the definition that I heard today from the renewable group.

And I want to be sure that we do not miss or leave out anaerobic digestion from livestock waste products. The potential is tremendous. The cost is more competitive than most operations.

I hear today costs are between six and seven cents up to 11 and 12 cents as being viable costs for production of energy. If we could get six or seven cents for the energy we produce, we could put all of the units that I'm talking about in in less than four years. And I want to be sure that I'm opening the door for consideration of cost benefits in capitalization, in environmental programs and so forth.

In my paper I gave one model, which is only a guide, but you're going to have to, as has been mentioned before, be able to have some type of an increased value for kilowatts produced in order to make renewable energy competitive with fossil fuels. And that's been the reason and the problem in developing programs.

If there were a three-cent incentive over and above the average cost of electricity coming into the grid, you could have competitive development of renewable energy in California.

If you went slightly beyond that, I'm speaking not for transmission or the management and distribution, I'm talking about production of energy, if you had methane reduction as a credit in there at two cents a KW, and CO2 reduction at a quarter of a cent, NH4 reduction at let's say a quarter of a cent, and as following those things back, the energy produced for each KW would be valued at whatever was necessary to encourage or to compensate for those particular environmental things that you are reducing and becoming a benefit for the customer.

The other additional thing on that is that all can be posted on the billing as to what those credits are, and the consuming public or commercialization can pick and choose those types of energy development that they prefer. This would answer the questions about renewable energy, about environmental pluses, all the way through.

You could come back with a roughly a 4.8 cent per KW if all of those factors were included in it. And it makes it a fairly reasonable, I think, cost factor that could be generated for no subsidies, no tax incentives, all of the other things that warp the investment situation into these types of projects.

I'd be happy to answer any questions that I can without getting infringing on your time restraints today.

But I think there are an awful lot of things involved in this type of energy production that need to be looked at as you go about trying to distribute money for facilities that are in place or ideas that are in place that would not address all of these things which make an economically viable environmental plus.

COMMISSIONER SHARPLESS: We have received your proposals and appreciate you typing them up.

You do talk about establishing a baseline kilowatt per hour and then trying to determine the additional value for each reduction of environmental problem, pollutant or whatever. And you have indicated this is a model. So when you add those all up, you add them on top of the based kilowatt hour, right?

MR. SHARP: Which brings you into the seven or eight cent area, right.

COMMISSIONER SHARPLESS: Which brings you into the seven or eight cents area. So your proposal would be to look at each one of the technologies and do that kind of analysis, and their value would be based on what their environmental attributes would be basically, plus the general energy costs.

MR. SHARP: And that all technologies be treated the same.

COMMISSIONER SHARPLESS: That all technologies, yes.

Where is the revenue stream? You know, we have $540 million that if we were to spend it on a program like this we could probably exhaust it fairly rapidly I would expect. After the $540 million was gone, how would we pay for the additional environmental credits of the added, that would be added on top of the energy costs for these renewables?

MR. SHARP: Some of that possibly, and this is only a possibility because I don't know how accurate the forecasts are, but green energy is a possible source of some of the funding on this. I don't know how much.

COMMISSIONER SHARPLESS: You mean the voluntary contributions?

MR. SHARP: That's correct. Rebates seem to me, unless I'm misunderstanding them, are still a subsidy from one entity to another as far as rebates defined. I would hope that we could get away from that to where whoever is going to bid would bid on the energy that they were going to produce for the value that it's worth. If it needs in renewable energy to have a one cent increase or a two cent increase, or whatever that has to be determined by your funding, let it be that. Those viable technologies will work to the front.

COMMISSIONER SHARPLESS: But, I mean you could look at this one of two ways. It would need to continue to have some type of funding to continue to, or you're expecting, because the environmental attributes are identified that people will buy them now that they know the environmental attributes, they will buy the premium of six to seven cents without any additional subsidy.

So basically your program would not need any of the $540 million.

Your program would basically say to the public: This is what you're getting in emissions reductions, this is what you're getting in environmental benefits. It's a three to four cent premium on top of the fossil fuel charge. And that would be it.

MR. SHARP: Right. I'm certainly not --

COMMISSIONER SHARPLESS: So don't spend any of the 540 million.

MR. SHARP: If you feel that renewable energy has to be boosted to become viable, then you would use some of that money to do that. That's what I hear here today.

COMMISSIONER SHARPLESS: Well, how would you boost it? I don't --

MR. SHARP: With the initial one, two or three cent over whatever the bid basic cost is of fossil fuel.

COMMISSIONER SHARPLESS: And to whom would you give it?

MR. SHARP: To those who are qualified in producing renewable energy.

COMMISSIONER SHARPLESS: So to the producer.

MR. SHARP: Yes.

COMMISSIONER SHARPLESS: And for as long as the money holds out, and that would build a green market basically.

MR. SHARP: That's the basic idea of this whole program is four years to develop and go into that, and I would think it would have to be the same way on that.

COMMISSIONER SHARPLESS: Well, there are proposals out there that are suggesting that. Okay.

Thank you.

PRESIDING COMMISSIONER MOORE: Thank you very much.

Ed Hudson.

MR. HUDSON: My name is Ed Hudson. I am Vice President of Operations for Independent Hydro. We own, operate and manage eight hydro electric projects in California. We have some in other states also.

What I've heard today is that hydro is not a renewable and does not

need support as other renewables are. And yet hydro is working under the same contracts, under the same problems that all projects in California are in that we signed up for SO4 contracts. And our particular projects are coming to an end and going on avoided cost this year or next year. Some others have gone on the avoided costs prior to that.

Hydro suffers from a few things that the other projects don't in addition to the project financing in that we have FERC licenses, which take a long time to acquire, and once we have them we have some obligation to the public for recreation and other facilities.

What is happening now on some of the hydro projects, and we have some that are in that case, is that we're getting to the end of the forecast period, and these were typically financed with 20-year debt. We've been lucky in the last couple of years to put some money away to keep some funding to pay debt, but if we can't get through the transition period to get on an open market where we think we can compete with others when we have a more rate based bidding process, a lot of these hydro projects are going to be foreclosed on or will otherwise quit operating.

And what we see is help like the other renewables in getting through this transition period until we have a more steady rate base so that we can compete with other renewables, gas, other energy producers.

One of the things I guess has been a problem is that nobody has represented hydro at your hearings. Most hydro projects are very small projects. And hydro does not have an association in California to represent them as a group.

Word gets out very slow through the industry in a very quick process like you're having here. I think you've heard from a few of the hydro people today that we do exist, and we do consider ourselves a renewable, and we do need help as the others do through the transition period.

I'll open up to any questions. Otherwise, I thank you for your time.

PRESIDING COMMISSIONER MOORE: Thank you.

I just want to correct one statement that you made at the beginning. As far as I've heard today, and I have been listening pretty carefully, no one described hydro as anything but renewable. I think the question has been what kind of hydro

might qualify, and whether or not once it joined the club, if you will, as a renewable it ought to get any money. But I don't think, I didn't hear anyone say that hydro wasn't a renewable.

Thank you. Appreciate your time.

K.R. Broome.

MR. BROOME: I represent Power Wheel Corporation.

And our interest in this proceeding is to find a way to get our demonstration project constructed. I had expected that the ETAP program would have been available this starting last October, but it's been postponed I think largely because of the effect of restructuring.

And I would like to make the case that this is an effect had a negative impact on the timing of our demonstration project which was planned to be funded in middle of this coming year. And as I understand your time frame, you will not actually have funds available for disbursement even if hydro was recognized, even if our project would qualify, until beginning of '98. Is that correct?

PRESIDING COMMISSIONER MOORE: That's probably accurate. I mean in a very mechanical sense it's hard to see how we could get access to funds prior to that.

MR. BROOME: I did give quite a description in my written testimony, but I don't think you really would expect me to give all of that at this time from the context of the meeting. So I would like to leave a question with you, though. Is there some way that ETAP funds could be allocated in such a way that we don't actually lose time as a result of restructuring?

PRESIDING COMMISSIONER MOORE: That's a reasonable question. I'm not sure that anyone's prepared to answer it today, but I'll ask that the Staff address that question and some other funding questions that have come up in the December 3 workshop. So we're not prepared to answer that I think today.

MR. BROOME: Okay. I understand, and I certainly will be interested.

PRESIDING COMMISSIONER MOORE: It's a reasonable one to ask. No question about that. So I'll ask Staff to address it at the next workshop.

MR. BROOME: The other thing I'd like to offer is a briefing to your

Staff who I neglected to inform about our project and what we're doing. And I'm sure you do, in fact I was told yesterday, that you like to keep up to date with what's happening. And I'd be pleased to come and meet with your Staff people and give them a complete briefing.

PRESIDING COMMISSIONER MOORE: Thank you. Appreciate the offer.

MR. BROOME: Okay. Thank you.

PRESIDING COMMISSIONER MOORE: Thank you very much.

All right. David Konwinski. Have I pronounced that right, Konwinski, from Energy 2000.

MR. KONWINSKI: Yeah, I'm David Konwinski with Energy 2000.

I only heard mentioned once today on renewable fuels the methane digesture gas. Our proposal is to work with waste water treatment facilities and taking methane, which they're currently flaring into the atmosphere, and converting it to usable power for outside by fuel cell installations.

Now California has just over 600 waste water treatment facilities. Typical one that we surveyed puts out 17 million cubic feet a year of methane. Fuel cells will produce power through a non-combustion process with almost zero emissions. So we can solve a large environmental issue as well.

We just want to make sure on certification that digesture methane is considered. We've reviewed several facilities in Southern California --

PRESIDING COMMISSIONER MOORE: Mr. Konwinski, could I ask you a question while you're giving us your remarks. Do you know in general the range of power demand for a municipal sewer treatment plant? I think I should know that because I served on one of those.

MR. KONWINSKI: Yes. It's, the typical plants we looked at are about one and a half meg to two meg of power. And what they would use is put a fuel cell only enough to use the methane that they have to create standby power for typical loads that they want to keep on line. It would not provide enough power to run the entire facility, but what it would do is utilize the methane.

To put fuel cells to cover the whole plant would be not economical.

But just to utilize the methane that's currently being flared and to produce on site power from that instead of just flaring it, we can show a cost pay back of less than five years with the grant program that we have requested.

Basically, at the commercial rate that they pay, each plant could generate $275,000 a year in utility power alone, not counting the heat that's a byproduct of the fuel cell, to go into their boiler system creating full cogen or micro cogen system.

So what we do is we only look at the amount of methane that they are currently flaring and utilizing that into the system. Basically to cover the environmental issues.

PRESIDING COMMISSIONER MOORE: So would you be classified then as an emergent technology, or would you, frankly, be in the new technology?

MR. KONWINSKI: It would depend how a person would look at it. Fuel cells have been used for over 30 years.

PRESIDING COMMISSIONER MOORE: Right.

MR. KONWINSKI: In military applications. We want to mirror this grant with the Department of Energy fuel cell climate control program to commercialize fuel cells into the commercial marketplace. Get them away from military uses, get them into mass production and drive down the price to affordable level. So it is emerging technology into the commercial industry.

PRESIDING COMMISSIONER MOORE: Okay. And just to make sure I'm clear on what you're saying, you're indicating this is the best use of this, the most efficient use of this is in the standby power or backup power that the plants use.

MR. KONWINSKI: Typically like what we would do is we would dedicate one facility. We'll have 600 kilowatts of power from the fuel cell system. They have three pumps that run 24 hours a day nonstop that take 580 kilowatts of power. So we would dedicate these fuel cells to those pumps, and they would run continuously, and they would not have to worry about grid failure on those pumps.

So what we would do is we would find the loads that need to run 24 hours a day that could be subject to the grid. And then we turn around and we

would redesign the electrical to handle those uses.

PRESIDING COMMISSIONER MOORE: Thank you.

Jan.

Thank you very much. Very interesting. Appreciate that.

Jim Birk.

MR. PAK: Commissioners, I'm Al Pak. I'm with the Electric Power Research Institute, and I have with me Dr. Jim Birk who is the Director of the Institute's Research Program for Renewables and Hydroelectric Resources.

EPRI has a proposal that would have this Commission focus on developing new technologies, and so we'd be focusing on the emerging technology aspects of this program with the object of the goal that you see there which is sustainability of this industry.

You've already heard a lot today about the difficulty that a lot of these industries are having under current market conditions. That's likely to worsen as competition hits the deck. And so there are a couple of paths that we see that you can address.

PRESIDING COMMISSIONER MOORE: Before you start, just because this has been a nebulous area for us all along, you want to give us your definition of emergent technology?

MR. PAK: I think ours is consistent with the definition that the Staff had posted previously, and that would be a technology that's been successfully demonstrated or achieved limited commercial deployment but which represents a significant improvement over existing technology.

PRESIDING COMMISSIONER MOORE: Do you have a threshold for that that you use in your arguments?

MR. PAK: I think Dr. Birk can.

PRESIDING COMMISSIONER MOORE: Dr. Birk, do you have a number that you typically use?

DR. BIRK: No, not really. I'd say, I think just to clarify that definition a little bit more, when we talk about emerging technology, I'm not talking like PV is emerging technology. There are certain technologies within PV that are emerging

and certain technologies that are relics of the past and certain technologies that are available today.

You can take, for example, Siemen's technology which is putting out crystalline silicon probably in the neighborhood of 13 to 15 percent efficiency. If they would sell a 20 percent efficient silicon device, that would be in our mind an emerging technology, a considerable breakthrough. So we're talking about, you know, significant improvements.

PRESIDING COMMISSIONER MOORE: Didn't mean to interrupt. Just so we're on the same plane because a lot of different definitions of emergent technology have been advanced.

DR. BIRK: Right.

MR. PAK: Okay. Thank you, Commissioner. We're trying to compress a 15- to 20-minute presentation down to our five.

PRESIDING COMMISSIONER MOORE: I understand.

MR. PAK: I think our proposal really isn't much in the nature of the Staff proposal you heard today. We don't really represent a patient, but we have a proposal on how you'd run your hospital. And rather than run through a lot of the policy constructs that we would urge to the Commission, which I think are covered in some of the detail materials we've presented to you in writing.

I'll have Dr. Birk walk through the framework, and we can answer any questions on how you would go about implementing this and give you some specific ideas as to the numbers that would back this up.

PRESIDING COMMISSIONER MOORE: Fine.

DR. BIRK: Thank you. I'm Jim Birk, Electric Power Research Institute.

And clearly the goal of economics to sustainability is one that requires lower cost to the technology. And there's a couple of ways of going about doing that, and one is to buy the technology in hopes to reduce the costs, and the other is to reach out and bring the future in today. In other words, reach out to advance technologies.

And as I point out in the chart that deals with the premises, Al, with regards to buy down, let's take a PV for an example. There's the thought here of

buying 50 megawatts of PV over a six-year period. Well, during that same six-year period there'd probably be a thousand megawatts of PV sold worldwide. So you can appreciate that 50 megawatts is probably not going to accomplish in and of itself the significant price reduction that one might appear to have.

So the whole idea here is to reach out for new technologies. Ones where we have significant improvements in efficiency and lower materials costs. We're talking about copper indium diselinide [phonetic]. Taking advantage, for example, of the PV USA which was really designed to bring these emerging technologies to the marketplace in a much much more sooner period of time.

We're involved with DOE in a partnership to test advanced wind turbines. And when we first started this partnership in 1992, the typical wind turbines that were out there were in the neighborhood of about 100 kilowatts with 400 kilowatts on the drawing board, and we thought we'd start this program with the idea of being a bridge to the commercial marketplace of these new turbines.

Well, in fact we do have now two sets of Zon Z40 turbines being tested in Vermont and in West Texas now. And they are the 500 kilowatt breed. And we issued another RFP this year, in fact just late this summer, for another round of advanced wind turbines, and to our great surprise we're seeing wind turbines now only twice that size. Probably wind turbines that might be achieving three, three and a half cent a kilowatt hour.

So the point here is do we want to buy some of the old existing wind turbines or do we want to reach out and bring this new technology forward. And the Wind Turbine Verification Program is an example of ways to do that.

So the proposal that we have here is one of reaching out towards emerging technologies, again with emerging technologies being things that are demonstrated or nearly demonstrated and bringing them to the forefront and getting them into the marketplace as soon as possible.

Very quickly, on this chart this reviews, I think, what has been reviewed by many people before what the needs of each of the different entities are. The vendors, the users and the technology.

And clearly with regard to the technology, lower cost is a very

important requirement. We have the vendors, the predictability support, which was discussed and re-discussed here today. And real markets. And the users need education, incentives and renewable certification.

And the equations for success -- the next chart, Al -- what I'm suggesting here, what we're suggesting here is the two top equations. Let's take the, we'll go simultaneously. The idea of taking new commercial technologies, providing education and incentives.

For example, what many of the organizations propose, for example, in geothermal and PV, ending up getting a market and a business infrastructure developed as a result of that.

Simultaneously, in the second equation, we'd have potentially emerging technologies being tested, evaluated and assessed. A lot of them have been thrown out here on the table. There's really very little information that you can go on. With regard to the viability of these technologies, it would be important to bring these along as fast and as far as we can.

But the idea will be amongst these emerging technologies to select those that have the best chance of being successful.

And I've indicated a number of criteria with regard to the questions that was asked for this meeting. Some of the criteria might be its cost effectiveness. The cost sharing. The sustainability in California. The total base of use of that technology in California.

The idea then was with new technologies, I should say with the market and infrastructure up on the right-hand corner, we selected emerging technologies and further incentives, and now we can start seeing the beginnings of sustainable use and successful deployment of the technologies.

So this is the overall equations that we see might be helpful in bringing these new technologies to the marketplace.

And then finally on the last chart sort of summarizes what needs to be done. This left-hand side showing a number of different technologies. It didn't mean to be exclusive of any. Hydro could be included. Landfill gas certainly included, it's part of biomass. The idea here is taking advantage of information

that's out there today to indeed in support maybe PV USA even further to encourage additional advanced renewable or advanced PV to come forward.

And then amongst these, testing, evaluation, selection and finally picking selected emerging technologies that would be appropriate for the State of California. That, in short, is our proposal.

PRESIDING COMMISSIONER MOORE: Right. And in a sense I guess I'm sorry that you didn't present this on the first day when we were talking about the structure, but I'm glad to have it because we'll be obviously going through a lot of this over the vacation. Some vacation.

MR. PAK: Yeah, part of that, Commissioner, is we, at first we thought that emerging technologies would be represented simply because they were in the statute. We have become increasingly concerned that emerging technologies, which we think represent the most viable technologies for a sustainable future as far as these industries are concerned, are not being represented. So we decided to step forward. We apologize for being late.

PRESIDING COMMISSIONER MOORE: Well, as we've said so many times, this is a work in progress. I mean we're inventing as we go along.

Thank you, gentlemen.

I'm going to keep going. I have several names still to go before we quit tonight.

John White.

MR. WHITE: Thank you, Mr. Chairman, Commissioner Sharpless. John White with myself at the moment.

I don't want to, at this point, have my remarks be deferred as representing CEERT because I haven't had a chance to develop fully this position, but I wanted to take responsibility, nonetheless, to give you some comments both on the Staff triage document as well as the renewable industry proposal.

I think one of the things that's lacking in the Staff document initially is the idea of a public benefits calculation or evaluation. I don't think that all of the renewable technologies necessarily have equal public benefits. And I think, in fact, there will have to be a consideration added to the list of criteria.

I actually thought the document and the methodology was useful at striking a goal. I also think that the triage analogy is most appropriate for the existing category of resources. And, in fact, what we're looking at on the new and emerging is really viability market penetration and competitiveness.

I think that what no one has yet done, and I'd like to at least throw it out, is a split between new and existing and emerging categories is a percentage. I think that we ought to at least examine a policy that I think consistent with 1890, it won't be popular with everyone, that we consciously limit the availability of funds for existing projects to 40 percent.

And that, second, we, and part of that because of the trade off between new investment versus keeping existing projects viable. Also because I think existing projects, we want to actually discourage existing projects from coming for money.

I think that the danger that we've already seen of the pot of money being out here and drawing people in that say they need it because their competitors are getting it or because they see other people that they think are less worthy getting it.

I also think that by their nature existing projects, which have had standard offer contracts and ten years of fixed price payments and have ongoing capacity payment structures, plus under the terms of 1890 a supplemented avoided cost mechanism, one of the things that's in 1890 that has not been widely discussed in this proceeding is the fact that the Legislature as part of the compromise agreed to augment effectively by putting in statute a formula for short run avoided costs that effectively raised the avoided cost payments for existing QFs of all stripes during the transition.

So I think that the combination of having received significant payments already, it is true that SRAC has been low the last couple of years, it happens to be higher right now than it's been in some time, and in one of the goals of IEP, which Art was the architect of this provision, along with the other parties, so I'm suggesting that the burden ought to be a meaningful one on existing projects seeking supplemental support. And that, in fact, I don't see any way to do that other

than a case by case or technology by technology or group of project application process.

I think you will need to look at the economics. You need to look at viability. It's already been mentioned there's some environmental compliance issues, and the environmental community impact issues that perhaps should be a condition.

I'm not sure, I don't think I agree with giving existing funds to mitigate existing damage, but I can say that it's fair to maybe make it a condition of receiving more money for an existing project that you be in compliance in that you not have neighborhood complaints, and that you have an opportunity prior to issuing those funds to, in fact, examine the merits of these kinds of factors.

And this is not a process anybody's going to want, but, frankly, if someone wants more money for existing projects, I think they have a burden to meet that has to do with why they need it, what they're going to accomplish with it and what their public benefits are.

And I think that's a different case than for new. I think in the case of new I think the geothermal industry proposal best capsulates my own sense of what might be a middle ground position between the customer incentive mechanism and the revolving loan fund, although I would think the revolving loan fund ought to be open to other technologies within the new category.

I also think that the customer incentives need careful examination for their potential to be the bridge, if I can borrow a tortured phrase, past a transition.

I think that all of the other ideas that are floating around have some limitation in their ability to get beyond the transition period. I also think that just politically the Legislature will find it more interesting to consider continuing a program of public benefits for renewables if the customers have some substantial participation.

I think that one thing I would urge more clarity on, if the wind industry proposal is to be pursued seriously, is that there be some careful delineation between projects that are new and seeking repowers versus those that are simply continuing to operate.

I saw those asterisks in their proposal as a sign that perhaps the certainty of meeting even the 40 percent minimum requirement for new renewables might not be so certain. And so I think that that's a consideration that I think we need.

And that's why I think you ought to really put the existing projects in a different arena than the new and emerging because I think the mechanisms will end up being different. You could have production incentives for new renewables, but the bulk of the discussion about production incentives in fact relate to existing projects.

The other thing that I think has been glossed over but I think is a significant concern is that these mechanisms potentially may invalidate available existing federal incentives. And I think that's something that everybody's tax lawyers are looking at, but I wouldn't want to see us depend on an incentive mechanism that in fact had a question about its applicability in the future.

We're going to keep trying to think about these issues ourselves, but I wanted to give you those initial reactions to the discussions we had today.

PRESIDING COMMISSIONER MOORE: Thank you. I appreciate your comments.

Jan.

COMMISSIONER SHARPLESS: I would like to ask John one question. The contemplation of a revolving loan fund, John. This, you know, depending on what the purpose of the program is, I've heard nothing about an appropriate timing issue on a revolving loan fund. Some of them go out to perpetuity, ad infinitum, and somehow I just don't see people buying into the idea that you have an ongoing revolving fund even after technologies should be competing in a open competitive market. It's almost like you're giving them now a competitive advantage to have no interest, low interest loans.

MR. WHITE: The point of mentioning the development bank or the renewable revolving loan fund is to recognize that in my, you know, I have been identified, I think it's fair to say, more with the idea of the customer incentives and CTC rebates and so forth because I tend to think that that's the most efficient

mechanism for getting new renewables out there to customers.

I think customers will want to buy them, and I think the customers that want to buy them first ought to be encouraged because we need those customers to step up and help build that infrastructure; but I also think it's fair to say that the cost of financing renewables and the ability to finance renewables in this uncertain market is a problem.

COMMISSIONER SHARPLESS: Yes.

MR. WHITE: And in fact the single greatest cost component for a new renewable project is its cost of capital.

Now, I happen to think the federal government would be a way of mobilizing some of that low cost capital, but the fact is is that the question of competitiveness of renewables bears significantly on the cost of money. And if you could do both, a way of incentivizing customers as well as lowering the cost of capital, I think that would be good.

COMMISSIONER SHARPLESS: But I'm not arguing one over the other. I'm arguing really about rebate money is something that you give and it goes away. You're building a market.

Revolving money is something that you give and it comes back, depending on whether it's no interest or low interest, it's either growing or it's not growing. But the idea of a revolving fund gives you the impression that it's going to go out for a long period of time.

MR. WHITE: Well, I can't speak specifically to the details of that program design because I've only looked at them generally.

I think conceptually we have a limited amount of money for a limited amount of time, but no one has said we have to spend all that money in the time that it's collected. So I think you do have some flexibility at going beyond the end of the transition.

COMMISSIONER SHARPLESS: How much flexibility?

MR. WHITE: Well, the only thing that is inflexible is that until the Legislature renews the renewable support, which I happen to think that they will at the end of the period if we spend the money wisely. That's one of the factors I have

in mind.

If all we do is piss this money away, excuse me, but, you know, just put it out the door, and it doesn't deliver a particular set of results, it's going to be very hard to argue for its renewal.

I think that the Legislature basically said, look, this is the amount of money that there is to support new, existing and emerging renewables. We were unable to reach agreement, and I think you all maybe have a greater appreciation for why that agreement was elusive. Although I would have loved to have everybody that's been here in your process helping across the street. One of the things we might have done is got more money and maybe for a longer period of time.

But I think that you do have the ability to establish a program with the amount of money that you have that goes beyond the end of the transition period. I don't think the statute limits you in that respect.

And so I think what your, what I'm just trying to suggest is that each of these categories will require levels of review and levels of oversight that I think will vary on the extent to which the applicants for the process are depending on specific support for them as opposed to helping them enter the market and let the market choose.

I would think that if you have a market base mechanism there's less need for the oversight of the Commission provided that the definition is there. But there seems to be within the community of people working on this strong sentiment to maintain producer subsidies as a component of this of which a loan fund would be also a subsidy.

I'm just trying to give you some things that you should be looking for as you seek to administer it and maybe give a range of choices that would meet a bulk of needs.

I know everybody's looking for consensus. It's just it's been hard to come by.

COMMISSIONER SHARPLESS: Thank you.

PRESIDING COMMISSIONER MOORE: Thank you, Mr. White.

Tobbie Hopper. Is there a Tobbie Hopper here? Okay.

John Grattan. He spoke earlier and has now left.

Christo Artusio.

MR. ARTUSIO Chris Artusio, Environmental Defense Fund. I'll be brief.

Although we have not yet had time to fully review the industry consensus proposal, our initial overview leaves us a little bit concerned. We believe that this proposal will not adequately create new markets, which are critical for the future of renewable energy.

We are concerned both by the lack of specific assurances that even 40 percent of funding will go to new and emerging technologies, and by the lack of customer driven approach in the application of almost all of the funds.

We are concerned that their proposal does not address the Legislature's directive to create market based mechanisms to distribute the funds and will not give rise to a new generation of competitive renewable technologies.

As you know, EDF's proposal has concentrated solely on a mechanism for allocating funding among new non-emerging technologies. We are eager to work with industry to develop a proposal that would create a competitive vibrant market for all technology groups, including existing.

That's the extent of my comments.

COMMISSIONER SHARPLESS: Okay. I take it then that you're going to be actively involved in the December 3 discussion.

MR. ARTUSIO: Absolutely. You can count on it.

COMMISSIONER SHARPLESS: Okay. Thank you.

Okay. It's Eric Miller and Jody London.

MS. LONDON: Good evening almost. We promise to keep it short. We know it's been a very long day and lots of information.

We just want to remind you that last week we did put forward what we believe was a very comprehensive proposal focused on a demand side allocation for this money. It's a pretty flexible proposal.

In the information that we've seen today we can see lots of different elements that could be incorporated into the proposal that we put forward. And we

will not elaborate on it here, but we can certainly do that at another time.

And we also think that the proposal we put forward is flexible enough to allow the Commission to allocate amongst all these different competing interests within the mechanism that we put forward as you see fit based on the information that you gather.

The proposal that we put forward is based on the statute. It's market driven. There's a provision somewhere in there that says, you know, this needs to be based on a market. And we think that if you were to follow our proposal you'd end up at the end of the four years with a competitive and sustainable industry that's driven by customer demand.

And the last thing that we wanted to say is that we support Jan Hamrin's certification proposal.

And did you want to add anything, Eric?

MR. MILLER: No, thank you, unless there are questions.

COMMISSIONER SHARPLESS: Your proposal, as I recall, applied to all forms of beast: Existing, new and emerging. You didn't say that you felt it was most appropriate for one category over the other?

MR. MILLER: No. We felt that in each category, although the specific support levels, in some cases the structure of how you give it to the customer might need to change, that in all respects the concept that a customer driven mechanism is the appropriate way to bring all forms of technology. Ultimately consumers, customers are going to buy all of these if they're successful, and, therefore, that that's a focus that's appropriate to any technology that is at the stage where a consumer can purchase it.

And I believe new, existing and emerging all fit the definition of they're at the stage where a customer is ready to buy them; and, therefore, having a customer oriented incentive we think makes sense in any of those situations.

COMMISSIONER SHARPLESS: Okay. Any other questions from the Staff?

Okay. Well, that brings us down to the, actually the end of the list. And judging from the size of the audience, we're a dwindling audience as well.

I would just like to say Michal stepped out briefly, and I hate to close with him not being here, but perhaps I can start by just saying that you have given us much information to think about. I hope that you will participate in the December 3 workshop to further perhaps flesh out ideas and details and concerns that might be raised among the parties.

I just wanted to reiterate information in the notice that went out both for this hearing and for the December 3 hearing that there is, you can present or send in comments I believe in the next three days until Friday on the Committee questions and anything that you've heard today. So there will be that opportunity.

And, Michal, you're just in time to sign off the air.

PRESIDING COMMISSIONER MOORE: You know, before I sign off, I had promised Marwan that I would give him the floor and ask him for any wrap up comments. Have you already done that, Marwan?

COMMISSIONER SHARPLESS: No, I was unaware of the program.

MR. MASRI: I have not.

PRESIDING COMMISSIONER MOORE: Okay. You have to communicate your promises widely. Marwan.

MR. MASRI: Thank you. In fact, Commissioner Sharpless has already said some of the things I wanted to say which is to emphasize that on December 3 next week I would like to encourage the parties to come with as much information about their proposals as possible because we are going to use that occasion to gather as much information as we can to help us really evaluate those proposals and help the Committee come up with a synthesis as Commissioner Moore said earlier.

So come prepared to answer questions on the 3rd and bring as much information as possible.

Thank you.

PRESIDING COMMISSIONER MOORE: Okay. And I'll just wrap that and with a word for those of you who are FERC watchers and concerned about what happens with the ISO, the FERC decision came down today, and it gave and it took away. It approved the ISO and power X set up, but it sharply constrained the role of the oversight committee. Something I'm not sure the Legislature in their

ruminations at the very end anticipated. So it is truly a dynamic world.

Thank you for your patience, all of you, and we'll look forward to hearing what you have to say after the 3rd. And, of course, you will see our response to that in January with our draft document.

Thank you very much. Good night. Drive carefully.

[Whereupon the workshop adjourned at 5:13 pm.]

CERTIFICATE OF REPORTER

I, **A. FLYNN**, a duly commissioned Reporter of **CourtScribes**, do hereby declare and certify under penalty of perjury that I have recorded the foregoing proceedings which were held and taken at the **CALIFORNIA ENERGY COMMISSION** in Sacramento, California on the **26th day of November 1996**.

I also declare and certify under penalty of perjury that I have caused the aforementioned proceedings to be transcribed, and that the foregoing pages constitute a true and accurate transcription of the aforementioned proceedings.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in the outcome of said hearing.

Dated this **2nd day of December 1996** at Foresthill, California.

_____

A. FLYNN

REPORTER